

*F i n a l   R e p o r t*



# Greater Minnesota Public Transportation Plan

# 2001

*M o v i n g   M i n n e s o t a*

*Prepared for:*

**The Minnesota Department of Transportation  
(Mn/DOT)**

*Prepared by:*

**Abrams-Cherwony & Associates**

*In Association with:*

**Mundle & Associates, Inc.**

**Urbitran Associates, Inc.**

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(These appendices can be obtained on the Mn/DOT Office of Transit web site [www.dot.state.mn.us/transit](http://www.dot.state.mn.us/transit) or by request of the MN/DOT Office of Transit.)

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## **SUMMARY**

This document is the result of a two-year planning effort to develop a public transportation plan for Greater Minnesota. Greater Minnesota refers to the 80 counties outside of the seven-county Twin Cities metropolitan area. It is one of the products of the Minnesota Department of Transportation's long-range plan to keep "Moving Minnesota."

The mission of Mn/DOT's Office of Transit is "to help people and communities meet their mobility need by supporting safe, responsive, efficient and environmentally sound transit service." This plan translates that mission into a plan for a statewide network of public transportation services throughout Greater Minnesota.

Ten years ago, public transportation services existed throughout 37 counties and in 22 municipalities. Twenty-one counties were without service. Today, there is public transportation service in 64 counties and nine municipalities. Seven counties are without service. Through this plan, Mn/DOT continues working toward the goal of making public transit available to residents of all 80 counties in Greater Minnesota. This will be accomplished by; increased service efficiency, coordinate and cooperate with special transportation services, and committing more resources.

The plan has five distinct components. Each component is described as a chapter in this final document as well as in summary below. A separate executive summary and a separate document addressing performance guidelines are available.

## **CHAPTER SUMMARIES**

### **Chapter 1 - State Demographic Profile**

This chapter provides an overview of population and employment trends in Greater Minnesota from 1990 through 2010. It describes the setting in which the public transit network currently operates and some of the more significant environmental changes that will influence future transportation investments. The structure of the current transit network is highly influenced by such factors as total population, age and income characteristics, population density and employment characteristics. As these characteristics change over the next decade, they will influence the network of services and investments in transit needed to meet the changing needs of Greater Minnesota residents. Appendix A contains maps for each Mn/DOT district as well as population figures and trends.

### **Chapter 2 - Existing Systems/Peer Group Analysis**

This chapter has two components. First, it summarizes the current transit services operating in Greater Minnesota. Secondly, it highlights the results of a peer group analysis where Greater Minnesota systems were compared with peer systems in other states as well as among themselves.

In summary, there are 67 separate transit systems that are contained within the seven Mn/DOT districts that make up Greater Minnesota. In 1998, these systems provided nearly nine million rides a year using 500 vehicles. There were an estimated 800 people employed at these systems. The total annual cost to operate the services was approximately \$30 million. Each year about \$12 million is expended on capital items such as new vehicles, facilities and communications equipment.

Appendix B presents detailed information on the current transit systems that are operated in Greater Minnesota grouped by the Mn/DOT district.

For the peer group review, Greater Minnesota systems were divided into eight categories: urban, Americans With Disabilities Act (ADA) paratransit, rural, county, multi-county, small urban systems within county systems, small urban systems over 10,000 population and small urban systems under 10,000 population. The urban, ADA paratransit and the three categories of small urban systems were analyzed by comparing their service provided, operating efficiency and effectiveness with nationwide and Greater Minnesota transit systems of similar size and service characteristics. No peer data was available for rural, county and multi-county systems. Therefore, comparisons were made for each system using other Greater Minnesota transit systems in the same service category for the peer review.

In summary, the peer group analysis indicates that overall Greater Minnesota systems cost less to operate, and carry more passengers per hour than comparable systems in other parts of the United States. This performance occurs while most systems are providing less service per capita than their peers.

Summary reports for each system are listed in Appendix C and include a comparison of each system with its peers, a comparison of each system over time, and how each system performs compared to its peer group average based on 1998 data and data from 1994 to 1998.

### **Chapter 3 - Transit Service Needs**

This chapter describes the way in which service providers, community leaders, riders and the general public provided input to the development of the Greater Minnesota Public Transportation Plan. Service providers were asked to identify their service needs as part of their annual funding application to Mn/DOT and through the completion of a special survey. Many service providers, community leaders and other agency representatives also participated in two series of workshops held in their Mn/DOT districts to discuss need. A number of key individuals from around the State were visited for one-on-one interviews to discuss transportation need in Greater Minnesota. Prior to work on this plan, a market research study consisting of telephone surveys, on-board rider surveys and focus group meetings was performed in 1999 and 2000. This research work provided valuable input to this plan. Further, prior transit studies conducted in other areas throughout Greater Minnesota were also reviewed as plan input. Finally, a Steering Committee was formed with representatives from a wide range of Minnesota agencies. The Committee provided active participation throughout the project.

From this review, five key findings were identified:

- There are seven counties and seven small urban areas without public transportation.
- In most communities, transit service ends by late afternoon or early evening. In fact, only 11 of the 67 systems operate after 6 p.m.
- Most services operate only Monday through Friday. Only one-quarter of the systems operate on Saturday while only 11 operate on Sunday.
- Because of limited resources, trips are often confined to political boundaries, such as city or county lines.
- Again, because of limited resources, many systems are in need of a new transit facility, a radio communication system and an upgraded computer system.

In summary, despite their strong performance, the transit systems have not been able to meet all of the mobility needs in Greater Minnesota. Expanded services to meet these needs cannot even be considered with the current level of federal, state and local funding.

Appendix D details the comments made at the district workshops as well as by the attendees for both the first and second round of Mn/DOT District workshops.

## **Chapter 4 - Transit Need Assessment**

This chapter presents estimates of the 2010 transit needs of Greater Minnesota. The estimates are based upon data for current transit services and population and demographic information projected for the year 2010.

The analysis points out that in 2010 there will be a need for public transportation to serve 16.7 million trips in Greater Minnesota. If current productivity levels (passengers per capita) are maintained by Greater Minnesota systems, they will provide 9.6 million trips or 57.4 percent of the need. The gap can be eliminated in three ways:

- Make efficiency improvements to current services. However, since current systems are relatively efficient, this action will satisfy only a small portion of the need. (i.e., 0.33 million trips or 1.9 percent of the need)
- Continue to coordinate and cooperate with special transportation services, such as those funded with Section 5310 funds and intended for meeting mobility need of senior citizens and persons with disabilities. Maintaining coordination and cooperation with these other agencies will result in 2.8 million trips or 16.8 percent of the need.
- Commit more resources to enable expansion of services by existing and new providers. Service expansion could provide 3.99 million more trips or 23.9 percent of the need.

The plan develops two targets for fulfilling the need. First, by 2010, it is proposed that transit should meet at least 80 percent of the need in all 80 counties of Greater Minnesota. Meeting this 80 percent target means that more resources are required to provide services for a total of 15.6 million trips. These trips will require 1.4 million hours of service at an annual operating cost of \$50.9 million as well as 210 more vehicles with a capital cost of \$12.1 million.

The second target is to fulfill a minimum of 90 percent of the need in all 80 counties by 2020.

Appendix E contains detailed estimates for the year 2010 for each transit system to reflect meeting four different levels of need – 70 percent, 80 percent, 90 percent and 100 percent.

## **Chapter 5 - Performance Guidelines**

This chapter describes how Mn/DOT's commitment to efficient and effective public transportation services in Greater Minnesota will be guided by performance guidelines. These guidelines have been developed to reflect the seven different service types that are operated by Greater Minnesota public transportation systems. In this regard, the plan is for each system to adapt and refine the guidelines into its own performance standards for each type that it operates. This chapter defines how these performance guidelines were developed, lists the seven different performance guideline categories, summarizes the guideline topics and describes how they should be applied by an individual system.

## **CHAPTER 1**

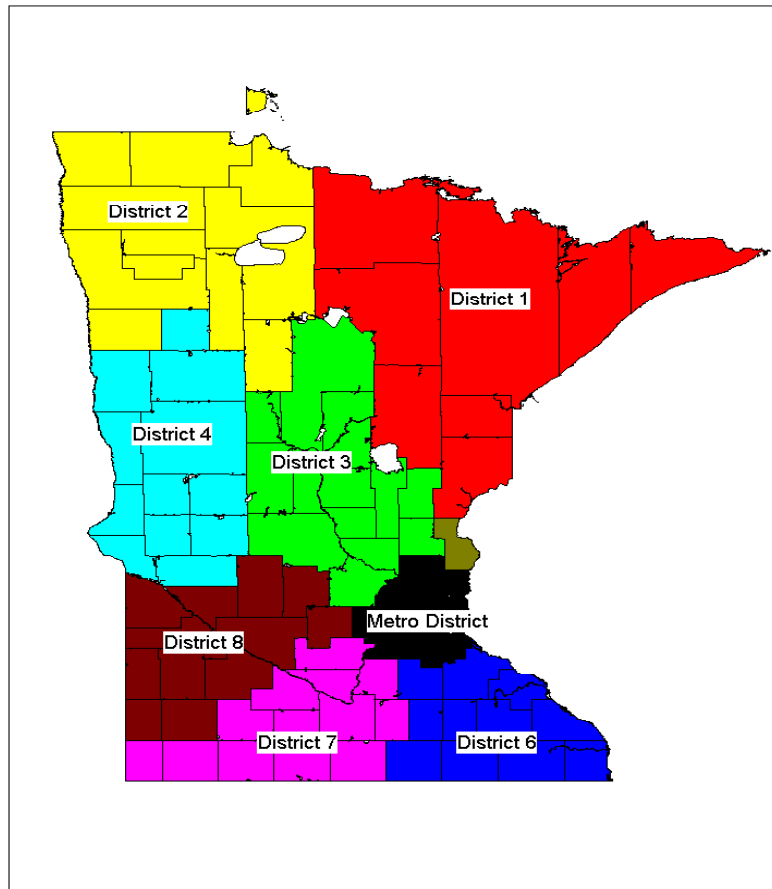
### **STATE DEMOGRAPHIC PROFILE**

This chapter provides an overview of population and employment trends in Greater Minnesota from 1990 through 2010. It describes the setting in which the public transit network currently operates and some of the more significant environmental changes that will influence future transportation investments. The structure of the current network is highly influenced by such factors as total population, age and income characteristics, population density and employment characteristics. As these characteristics change over the next decade, they will influence the network of services and investments in transit needed to meet the changing needs of Greater Minnesota residents.

The overall trends, particularly a growing and aging population and growing economy, indicate that the need for transit services will continue to grow in the next decade. These trends, and the underlying data, are summarized in this chapter. Their purpose is two-fold; the first provides an overview of the Greater Minnesota population and employment characteristics and their influence on transit service needs. The second provides specific data on population trends that will be used in developing a model to forecast future need and the level of investment needed to meet them.

The overview presented in this chapter is supported by data collected at the county and municipal level and summarized for each Mn/DOT district in Greater Minnesota. These data are contained in appendices to this plan. A map showing each district is presented as Figure 1.

Figure 1: Greater Minnesota Mn/DOT Districts



### Greater Minnesota Population

Census Bureau predictions anticipate that Minnesota's population will increase by almost 20 percent between 1995 and 2025. Minnesota's anticipated growth of 900,000 persons in this period is the largest of the six states in the Upper Midwest.

The Minnesota State Demographer's Office showed a growth of 463,308 persons from 1990 through 1999. Much of this growth occurred in the Twin Cities Metropolitan Area (289,560 persons), with the growth in Greater Minnesota estimated at 173,748. Within Greater Minnesota, the patterns of growth differed greatly from district to district, and will continue to do so in the next decade. (See Figures 2 and 3)

As the figure shows, the areas that experienced the most significant growth in population from 1990 to 1999 are located in Districts 3 and 6, central and southeast parts of the state. At the same time, areas in northwest and southwest Minnesota showed some loss.

In the next decade, from 1999 to 2010, some counties are forecast to lose population, while other counties are not expected to grow at quite as fast a rate as they have in the past. Districts 3 and 6 are still expected to gain population, but areas in the western half of the state and the northeast "Arrowhead" is expected to lose population.

Overall, the increase in population in Greater Minnesota will trigger a need for additional transit services, with the investment patterns in part correlated with the overall changes in population. Total population by

itself, however, is only a part of the picture. Changes in age patterns, income characteristics, employment, and economic development will also influence the investment in transit throughout the state. Attempts to provide adequate transit service will need to address important issues such as providing transportation for transit-dependent populations, connecting rural populations with urban services, and providing an alternative to the automobile.

Figure 2: Population Change 1990 to 1999

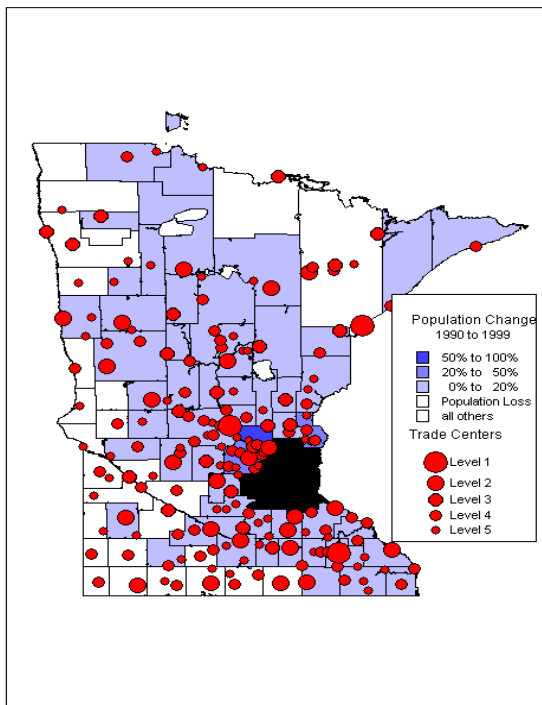
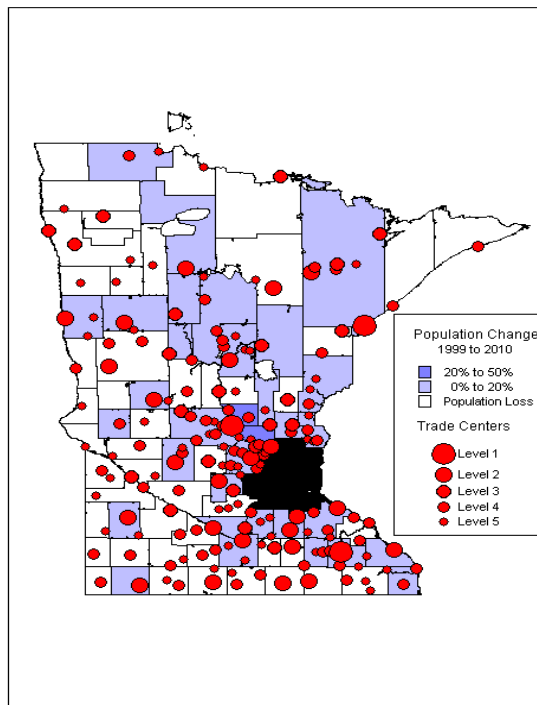


Figure 3: Population Change 1999 to 2010



## Senior Citizen Population

Not only is Greater Minnesota's population growing, it is also aging as the baby-boomer generation reaches middle age. Elderly residents are large consumers of public transportation services. This aging population trend will support the need for more services, particularly in areas where the total population and aging population are both growing. More services will also be needed in areas experiencing an overall decline in population with growth in the aging population segment.

This trend can be seen in the growth in the number of residents over 65 years of age and in the increasing median age of Minnesota residents. In 1980 Minnesota's median age was 29.2 years; by 1990 it had increased to 32.5 years. In 1995 the median age was projected to be 33.8 years. The forecast for the year 2025 is a median age of 41 years. Although this data is not available at the district level, data on the absolute number of persons over 65 years is demonstrating how these changes manifest themselves over time. (See Figures 4 and 5)

When compared to overall changes in total population, it is clear that elderly population trends do not necessarily follow the growth in general population. The increase in elderly persons occurs both in areas that are gaining and losing population, although areas that are gaining population are seeing larger increases in the number of elderly persons. The primary areas that are losing elderly population are the southwest and northwest corners of the state.

The largest increases in elderly persons are found in areas located near larger trade centers and in the resort areas of central Minnesota. The larger trade centers, when compared to Greater Minnesota as a whole, provide more services – more health care facilities, social service programs – that help senior citizens maintain a good quality of life. Conversely, low-density rural areas often isolate elderly individuals and create difficult transportation issues to overcome. Public transit in both places provides a lifeline service for many seniors.

As the baby boomer generation reaches middle age, many are buying second homes that later become retirement homes. This trend is particularly prevalent in central Minnesota, where many second homes close to resort areas have become primary residences after retirement.

Figure 4: Senior Citizen Population Changes 1990 to 2000

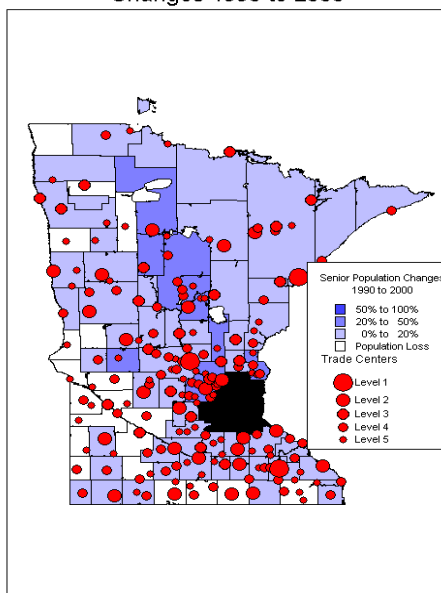
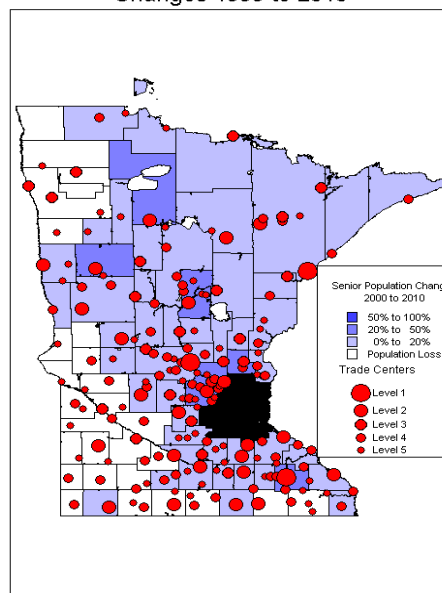


Figure 5: Senior Citizen Population Changes 1999 to 2010



## Regional Trade Centers

Regional trade centers, as described in *Moving Minnesota from 2000 to 2010*, are cities that serve as centers of trade and services for a surrounding area. More than 35 years ago, the University of Minnesota Center for Urban and Regional Affairs (CURA) completed an economic study of the upper Midwest that developed a eight-level hierarchy of places based on amount of trade and population, with metropolitan areas at the top and hamlets at the base. The latest update of this study, in 1999, was completed as part of the *Statewide Interregional Corridor Study*. Table 1 identifies all eight levels of the hierarchy and lists example communities at each level. Trade centers ranked from 0 to 5 have received the largest impact as population centralizes. Most counties that have lost population are located a great distance from level 1 or 2 regional trade centers. In many situations, trade centers located in counties that have lost population still managed to record a population increase, or at least less population loss.

**TABLE 1**  
**REGIONAL TRADE CENTER COMMUNITIES**

Level 7	Level 6	Level 5	Level 4	Level 3	Level 2	Level 1	Level 0
Hamlet	Minimum Convenience	Full Convenience	Partial Shopping	Complete Shopping	Secondary Wholesale/R	Primary Wholesale/	Major Metro

	Center	Center	Center	Center	etail Center	Retail Center	Area
Example Cities							
Brewster	Tower	Mahnomen	Blue Earth	Montevideo	Bemidji	Duluth	Twin Cities

The trend of centralizing population is expected to continue to the year 2010, with many high-level trade centers continuing to record population gains. The high-level trade centers located farthest from the Twin Cities are projected to suffer a population loss. Still, a larger portion of the population in Greater Minnesota will be situated within the regional trade centers.

As population continues to centralize in regional trade centers, connections between these trade centers, and from surrounding rural areas to the trade centers, will become increasingly important. This will serve many purposes including access to jobs, social programs, and other activities. Connections will be enhanced by public transit providers, and in some situations, social service agencies.

Population forecasts show that the areas in Greater Minnesota showing the greatest growth are the counties that border the Twin Cities Metro area, particularly in the Interstate 94 corridor between the Twin Cities and St. Cloud. As growth continues in the Twin Cities Metro area, surrounding areas will see continued growth due to close proximity of jobs and services. Providing transit connections to the Twin Cities from these outer counties will become more important. A plan already exists to initiate commuter rail service from the Twin Cities to St. Cloud along the Northstar Corridor. While commuter rail might not be warranted at this time to connect other areas to the Twin Cities, transit-dependent populations will still need a way to access jobs and services provided in the Twin Cities.

### **Job Growth**

Access to jobs is an important role of transit. Transit systems will need to provide service within the trade centers where jobs are being created. Connecting the population of Greater Minnesota to employment opportunities, particularly in trade centers with projections for significant job growth, is another emerging role for public transportation in the coming decade. (See Figures 6 and 7)

Employment is growing in resort areas and in some of the larger regional trade centers, principally in Districts 3 and 6. On the other hand, areas near the northeast (District 1), northwest (District 2), and southwest (Districts 7 and 8) are losing jobs.

Part of the employment trend that will affect all transportation services in the state is the centralization of economic activity in the Twin Cities. The Twin Cities is home to a number of Fortune 500 companies. Its vitality is enhanced by its access to the global marketplace via the existing transportation infrastructure. This has been and will continue to be an important factor in the Minnesota economy.

The areas that are seeing the largest growth in jobs within Greater Minnesota are the same as those experiencing the largest population gains, those counties immediately surrounding the Twin Cities, and along the corridor from the Twin Cities to St. Cloud. Thus, even as the population growth in these areas suggests the need for more services to the Twin Cities, the job growth in the same areas suggests more reverse commuting from the Twin Cities as well, requiring that the transit connections provide two-way service.

Figure 6: Employment Change 1990 to 2000

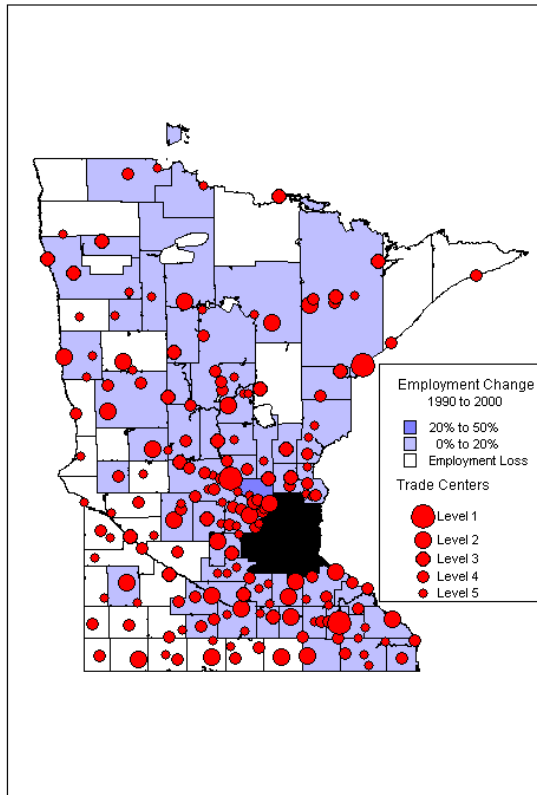
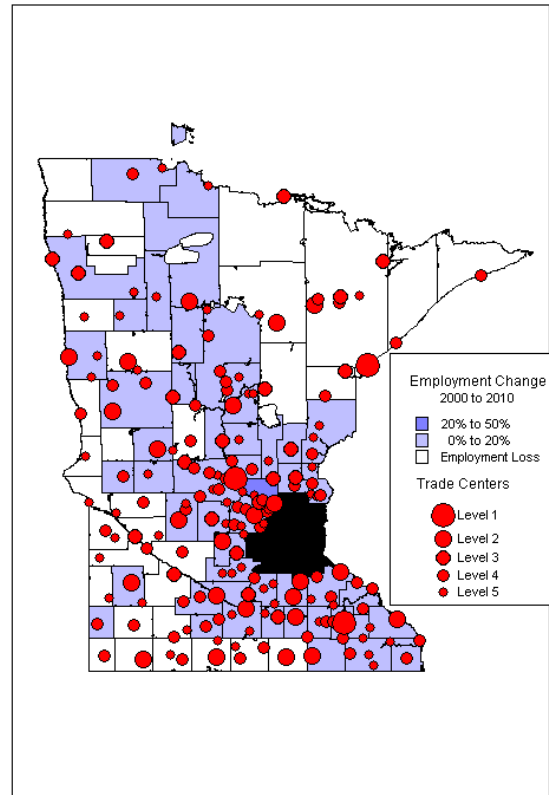


Figure 7: Employment Change 2000 to 2010



## Average Household Income

Average household income is useful in determining the disposable income of Greater Minnesota families. Areas that have a higher average household income are more likely to have households that own one or more automobiles and be less transit dependent. Areas with lower average household incomes will likely have more households with fewer automobiles and more reliance on public transportation as a primary means of transportation. Average household income is presented in Figure 8.

For the most part, average household income decreases from south to north. Specifically, the southeast areas of the state, including the counties that surround the Twin Cities, have the highest income. North central Minnesota, which includes most of the resort areas, has a lower than average household income. In areas that have a lower household income, families have less disposable income to spend on transportation, and less expensive public transportation is an important service in these areas.

Figure 8: Average Household Income

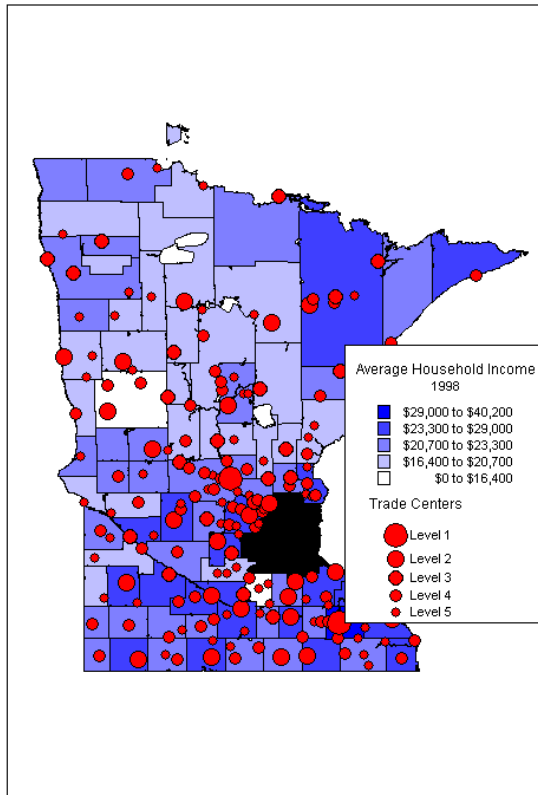
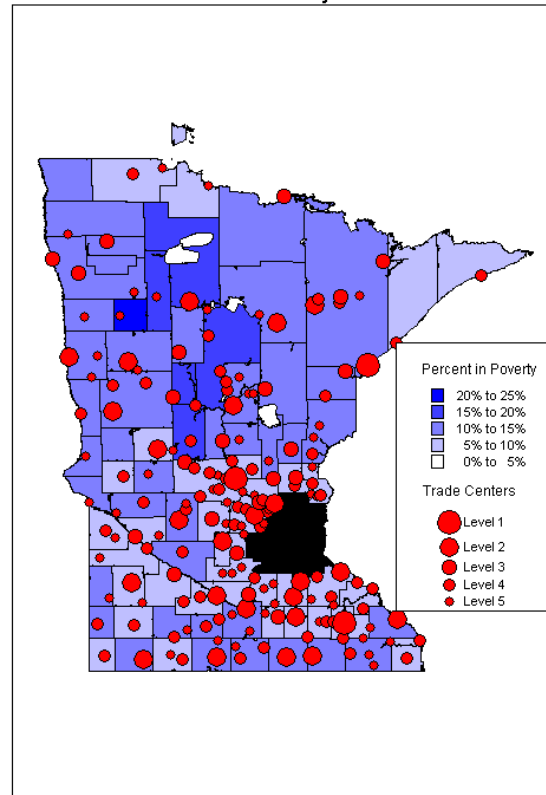


Figure 9: Percent of Population Below Poverty Level



Percent of population in poverty (Figure 9) serves as an indicator of transit dependency nationally. Areas that have a higher percentage of the population in poverty also have a larger transit-dependent population.

The percent of population below the poverty level closely follows the trend of average household income. Areas in the north have a higher percentage of people below the poverty level, while the south has a relatively low percent; the exceptions are counties along the Iowa border, which have a significant percentage of individuals living below the poverty level. Areas near the Twin Cities show lower percentages of persons living below the poverty level, which is consistent with the average household income trend.

### Summary

The trends described in this chapter have various implications for the future of public transportation in Minnesota:

- The growing population will require an increase in the amount of transit service.
- As age increases, the capacity to handle an automobile decreases, thus more transit service will be required to provide transportation to this population segment.
- As population centralizes in trade centers, transit operations will need to connect rural areas to the services provided in the trade centers and connect trade centers to each other.

- As employment patterns change, transit services will need to respond to these changes in order to provide adequate job access to those who require it.
- Transit services increasingly will be important to provide basic services to households below the poverty level.

Maps for each district, as well as population figures, are presented in Appendix A of this plan. Included in the appendix are:

- Statewide maps showing 1999 population, 2000 senior citizen population, 2000 employment levels, 1999 family income/poverty levels as well as changes for each from 1990 to 1999/2000 and 1999/2000 to 2010.
- Statewide tables by county showing population, senior citizens, employment levels and family income/poverty levels.
- Maps by Mn/DOT District showing population, population density as well as changes for each from 1990 to 1999 and 1999 to 2010 for each Trade Center.
- Tables by Mn/DOT District showing Trade Center Population.

## **CHAPTER 2**

### **EXISTING SYSTEMS/PEER GROUP ANALYSIS**

This chapter focuses on two areas. First, it summarizes the current transit services operating in Greater Minnesota. Second, it highlights the results of a peer group analysis where Greater Minnesota systems are compared with peer systems in other states as well as with each other.

#### **Existing Systems**

Public transportation service varies greatly throughout Greater Minnesota. The number of systems and the areas where service is provided has expanded significantly during the last 10 years. For example, in 1990, there was public transportation service throughout 37 counties and in 22 municipalities. This left 21

counties without any public transportation service. In 2001, public transportation services expanded to cover 64 entire counties and local service in nine municipalities. Currently, only seven counties are without any public transportation service.

In 1998 Greater Minnesota had 67 separate transit systems that provided nearly nine million rides each year using 500 vehicles. There were approximately 800 people employed in these systems. The total cost to operate the services was about \$30 million. Each year about \$12 million is expended on capital items such as new vehicles, facilities and communications equipment.

Appendix B presents detailed information on the current transit systems operating in Greater Minnesota. These systems are grouped by the Mn/DOT District in which they operate.

## **Peer Group Analysis**

One of the initial tasks in this plan was a peer group analysis comparing Greater Minnesota systems among themselves and with similar systems operated in other states. The analysis process divided the systems into different categories by size, service area and type of service provided. For this peer group review, the systems are divided into eight categories: urban, ADA paratransit, rural, county, multi-county, small urban systems within county systems, small urban systems over 10,000 population and small urban systems under 10,000 population. The urban, ADA paratransit and the three categories of small urban systems are analyzed by comparing the amount of service provided, operating efficiency and effectiveness with nationwide and Greater Minnesota transit systems of similar size and service characteristics. The rural, county and multi-county systems are unique to Minnesota and have no nationwide peers. Therefore, comparisons are made for each system using other Greater Minnesota transit systems in the same service category.

Summary reports for each system are contained in Appendix C and include a comparison of each system with its peers, a comparison of each system over time, and a comparison of whether each system performed above or below its peer group average based on 1998 data and data from 1994 to 1998.

The data for the Greater Minnesota systems was obtained from grant applications, annual transit reports and the National Transit Database (NTD) for the fiscal years of 1994 and 1998. The data for the peer systems was obtained from the NTD for the fiscal years of 1994 and 1998. Fiscal year 1998 was used in the peer group analysis since it was the most recent year of nationally published information at the time.

## **Highlights of Peer Group Results**

The peer group analysis revealed key findings in three areas. The first area focused on the cost of providing the services. As seen in Table 2, Greater Minnesota systems generally operate at a lower cost per hour compared to their national peers.

**TABLE 2  
COST PER HOUR PEER COMPARISON**

System	Cost Per Hour	
	Minnesota System(s)	Peer Average
Duluth	\$55.11	\$55.75
St. Cloud	\$42.92	\$50.82
Rochester	\$45.11	\$50.21
Moorhead	\$32.67	\$32.25
Mankato	\$41.07	\$43.21
Urban Area ADA Paratransit	\$25.12	\$32.79
Small Urban > 10,000 People	\$25.06	\$32.23
Small Urban < 10,000 People	\$25.46	\$32.23

The one exception is the cost per hour for the Moorhead system. However, its costs are nearly identical to its peers are, in fact much less than the cost per hour for the other urban systems operating in Minnesota.

The second area is a comparison of system productivity by passengers carried. The peer group measure in this area is passengers per hour. As seen in Table 3, many Greater Minnesota systems provide more passengers per hour than the peer systems. This is especially true for four of the five urban systems (Duluth, St. Cloud, Rochester and Moorhead). The ADA paratransit services operated by the urban systems are also more productive than their peers. This is not the case for the two groups of small urban systems. However, most of the non-Minnesota small urban systems contained in the peer group operate fixed route services. The small urban Minnesota systems primarily operated demand response and route deviation services. These service types are generally less productive, but provide a higher level of personalized service compared to fixed route services. Therefore, the lower productivity levels of Minnesota small urban systems compared to its peer systems are in line with the type of service operated.

**TABLE 3**  
**PASSENGER PER HOUR PEER COMPARISON**

System	Passengers Per Hour	
	Minnesota System (s)	Peer Average
Duluth	21.41	21.42
St. Cloud	25.88	20.18
Rochester	23.89	20.62
Moorhead	14.20	9.33

Mankato	13.23	15.99
Urban Area ADA Paratransit	3.08	2.78
Small Urban > 10,000 People	7.04	9.00
Small Urban < 10,000 People	7.20	9.00

The final review area is a comparison of the amount of service provided by the peer systems with the amount of service provided by the Greater Minnesota systems. The measure used for this comparison is service hours per capita. This measure is the number of service hours provided by a system in one year divided by the population of the area served by the system. As seen in Table 4, Greater Minnesota systems generally provide less service per capita than that provided by its peers.

**TABLE 4  
SERVICE HOURS PER CAPITA COMPARISON**

System	Service Hours Per Capita (Number of Systems)	
	More	Less
Urban Systems	3	3
Urban Area ADA Paratransit	2	2
Small Urban	7	28
Total	12 (27%)	33 (73%)

Of the 45 Greater Minnesota systems in which this review was performed, only 12 systems or 27 percent of the total provide more service in terms of service hours per capita than its peers. Five of the 12 providing less service are urban area systems. The other seven are small urban area systems. In fact, the vast majority of the small urban area systems (27 of 35 systems) provide less service per capita than their peers.

As noted above, there was no comparable nationwide data for rural, county and multi-county. Therefore, performance of these systems was compared with one another, as described below:

- Non-urbanized Community Transit Systems** - There are eight Greater Minnesota transit systems classified as non-urbanized community systems. These systems are located within non-urbanized areas and provide service to their respective communities only. They include Annandale Heartland Express, Appleton Heartland Express, Dawson Heartland Express, Fosston Community Transit Service, Ortonville Area Transit, Pelican Rapids Public Transit, Pine River Ride With Us Bus and Upsala Heartland Express. Table 5 includes the 1998 operating statistics and 1998 performance data of the eight Greater Minnesota non-urbanized community systems. The systems are compared with each other by service provided and system performance.

**TABLE 5  
MINNESOTA PEERS FOR NON-URBANIZED COMMUNITY SYSTEM COMPARISON**

1998 OPERATING STATISTICS							
	SERVICE AREA	PEAK	REVENUE MILES	REVENUE HOURS	UNLINKED PASSENGER	OPERATING EXPENSES	OPERATING REVENUE

SYSTEM	POPULATION	VEHICLES	(000's)	(000's)	TRIPS (000's)	(\$000'S)	(\$000'S)
Annandale	4,956	3	89.6	5.7	15.0	84.8	27.6
Appleton	2,944	1	13.9	1.5	10.1	33.0	4.4
Dawson	1,559	1	16.2	2.4	22.3	39.3	12.1
Fosston	1,500	1	21.0	2.6	22.5	41.0	8.4
Ortonville	2,067	1	12.4	2.1	13.4	31.7	5.6
Pelican Rapids	1,998	1	4.1	0.5	5.2	4.9	0.5
Pine River	984	1	7.4	1.8	5.0	46.2	3.8
Upsala *	2,385	1	11.9	0.9	2.3	14.9	2.4
<b>AVERAGE</b>	<b>2,041</b>	<b>1</b>	<b>22.1</b>	<b>2.2</b>	<b>12.0</b>	<b>37.0</b>	<b>8.1</b>

#### 1998 PERFORMANCE

SYSTEM	FAREBOX RECOVERY RATIO	COST PER PASSENGER	COST PER REVENUE HR	REVENUE HRS PER CAPITA	PASSENGERS PER CAPITA	COST PER CAPITA	PASSENGERS PER REVENUE HR
Annandale	0.325	\$5.65	\$14.88	1.15	3.03	\$17.11	2.63
Appleton	0.133	\$3.27	\$22.00	0.51	3.43	\$11.21	6.73
Dawson	0.308	\$1.76	\$16.37	1.54	14.30	\$25.21	9.29
Fosston	0.205	\$1.82	\$15.77	1.73	15.00	\$27.33	8.65
Ortonville	0.177	\$2.36	\$15.09	1.01	6.48	\$15.34	6.38
Pelican Rapids	0.102	\$0.94	\$9.80	0.25	2.60	\$2.45	10.40
Pine River	0.082	\$9.24	\$25.67	1.83	5.08	\$46.95	2.78
Upsala *	0.161	\$6.48	\$16.55	0.38	0.96	\$6.25	2.55
<b>AVERAGE</b>	<b>0.187</b>	<b>\$3.94</b>	<b>\$17.02</b>	<b>1.05</b>	<b>6.36</b>	<b>\$18.98</b>	<b>6.18</b>

\* Now part of Morristrans

- County Systems** - There are 22 Greater Minnesota transit systems classified as county systems. These systems provide service within the county and are the only public transit operators with the exception of three urban systems that reside in the areas of Hubbard, Mille Lacs and Brown Counties. Table 6 includes the 1998 operating statistics and 1998 performance data of the 22 Greater Minnesota county systems. The county systems are compared to each other based on service provided and system performance.

**TABLE 6**  
**MINNESOTA PEERS FOR COUNTY SYSTEM COMPARISON**

#### 1998 OPERATING STATISTICS

SYSTEM	SERVICE AREA POPULATION	PEAK VEHICLES	REVENUE MILES (000's)	REVENUE HOURS (000's)	UNLINKED PASSENGER TRIPS (000's)	OPERATING EXPENSES (\$000's)	OPERATING REVENUE (\$000's)
Becker	27,881	4	78.4	5.2	16.1	182.0	30.1
Beltrami	34,384	3	121.9	5.2	21.4	134.2	28.9
Brown	26,984	5	131.1	7.6	13.2	155.0	12.4

Clay	50,422	4	172.2	7.9	20.4	155.2	108.3
Clearwater	8,309	4	69.9	12.4	17.3	156.1	4.1
Cottonwood	12,694	2	61.8	2.3	14.0	63.5	21.8
Hubbard	14,939	3	60.4	4.8	10.1	103.3	3.6
Lake of the Woods	4,076	2	13.9	1.8	6.8	34.0	4.0
Lincoln	6,890	3	29.3	4.2	15.5	114.0	17.0
Mahnomen	5,044	4	60.6	3.5	8.2	98.9	9.1
Martin	22,914	5	215.4	14.0	59.5	258.6	83.2
Meeker	20,846	2	36.4	4.4	13.8	121.7	12.1
Mille Lacs	18,670	3	28.8	1.6	4.3	48.9	4.5
Mower	37,385	6	141.9	18.2	64.7	374.7	114.2
Murray	9,660	1	13.7	4.1	12.5	57.2	14.8
Nobles	20,098	2	34.6	2.7	14.2	71.5	3.4
Renville	17,673	2	14.0	6.9	14.0	111.5	44.6
Rock	9,806	3	70.7	5.6	23.3	183.5	38.5
Roseau	15,026	2	96.3	5.1	14.7	102.3	28.4
Sibley	14,366	4	95.9	4.6	23.8	224.7	37.0
Steele	30,729	2	103.5	6.3	37.1	163.3	42.3
Watonwan	11,682	2	47.7	1.6	6.3	54.9	9.0
<b>AVERAGE</b>	<b>19,113</b>	<b>3</b>	<b>77.2</b>	<b>5.9</b>	<b>19.6</b>	<b>135.0</b>	<b>30.5</b>

Clay County Rural Transit established in 1995

Martin County Heartland Express established as county system in 1997

Meeker County Public Transit established August 1995

Mille Lacs County Heartland Express established early 1995.

Mower County Heartland Express established August 14, 1995

Nobles County Heartland Express established as county system in 1998.

Renville County Heartland Express established May 1, 1996.

Sibley County/Trailblazer Community Transit established January 5, 1998.

Steele County Area Transit established January 1997.

Watonwan County/ Take Me There established January 1998

**TABLE 6 (Cont)**  
**1998 PERFORMANCE**

SYSTEM	FAREBOX RECOVERY RATIO	COST PER PASSENGER	COST PER REVENUE HR	REVENUE HRS PER CAPITA	PASSENGERS PER CAPITA	COST PER CAPITA	PASSENGERS PER REVENUE HR
Becker	0.165	\$11.30	\$35.00	0.19	0.58	\$6.53	3.10
Beltrami	0.215	\$6.27	\$25.81	0.15	0.62	\$3.90	4.11
Brown	0.080	\$11.74	\$20.39	0.28	0.49	\$5.74	1.74
Clay	0.697	\$7.61	\$19.64	0.16	0.40	\$3.08	2.58
Clearwater	0.026	\$9.02	\$12.59	1.49	2.08	\$18.79	1.39
Cottonwood	0.343	\$4.53	\$27.61	0.18	1.10	\$5.00	6.09
Hubbard	0.035	\$10.23	\$21.52	0.32	0.68	\$6.91	2.10
Lake of the Woods	0.118	\$5.00	\$18.89	0.44	1.67	\$8.34	3.78
Lincoln	0.149	\$7.35	\$27.14	0.61	2.25	\$16.54	3.69
Mahnomen	0.092	\$12.06	\$28.25	0.69	1.62	\$19.61	2.34
Martin	0.322	\$4.35	\$18.47	0.61	2.60	\$11.28	4.25
Meeker	0.099	\$8.82	\$27.66	0.21	0.66	\$5.84	3.14
Mille Lacs	0.092	\$11.37	\$30.56	0.08	0.23	\$2.62	2.69
Mower	0.305	\$5.79	\$20.59	0.49	1.73	\$10.02	3.55
Murray	0.259	\$4.58	\$13.95	0.42	1.29	\$5.92	3.05
Nobles	0.047	\$5.03	\$26.48	0.13	0.71	\$3.56	5.26
Renville	0.400	\$7.96	\$16.16	0.39	0.79	\$6.31	2.03
Rock	0.210	\$7.87	\$32.77	0.57	2.38	\$18.71	4.16
Roseau	0.278	\$6.96	\$20.06	0.34	0.98	\$6.81	2.88
Sibley	0.165	\$9.44	\$48.85	0.32	1.66	\$15.64	5.17
Steele	0.259	\$4.40	\$25.92	0.20	1.21	\$5.31	5.89
Watonwan	0.164	\$8.71	\$34.31	0.14	0.54	\$4.70	3.94
<b>AVERAGE</b>	<b>0.205</b>	<b>\$7.75</b>	<b>\$25.12</b>	<b>0.38</b>	<b>1.19</b>	<b>\$8.69</b>	<b>3.50</b>

- Multi-County Systems** - There are 10 Greater Minnesota transit systems classified as multi-county systems. These systems allow travel within and between more than one county in Greater Minnesota. Table 7 includes the 1998 operating statistics and 1998 performance data of the ten Greater Minnesota multi-county systems. The multi-county systems are compared with each other based on service provided and system performance.

**TABLE 7**  
**MINNESOTA PEERS FOR MULTI-COUNTY SYSTEM COMPARISON**

**1998 OPERATING STATISTICS**

SYSTEM	SERVICE AREA POPULATION	PEAK VEHICLES	REVENUE MILES (000's)	REVENUE HOURS (000's)	UNLINKED PASSENGER TRIPS (000's)	OPERATING EXPENSES (\$000's)	OPERATING REVENUE (\$000's)
Arrowhead	226,651	53	1,592.2	52.3	241.3	1,833.7	670.0
Chisago/Isanti ~	56,442	8	471.5	17.0	63.4	511.3	37.3
Prairie Five*	50,845	8	93.3	12.6	29.6	274.3	27.8
River Rider**	110,655	8	240.2	8.8	38.4	239.5	104.3
Semcac	133,562	5	47.4	2.9	10.3	76.7	12.7
Three Rivers/ Hiawathaland Transit***	60,434	4	12.9	2.3	7.0	78.8	7.3
Tri-Cap	148,976	6	81.9	16.8	29.3	184.7	30.5
Tri-Valley	69,297	9	139.4	4.8	6.6	130.5	15.3
West Central Multi- County/Rainbow Rider~~	60,762	13	349.2	31.1	56.2	635.0	151.7
Western Community Action	73,304	7	204.8	14.8	58.9	559.7	111.9
<b>AVERAGE</b>	101,268	12	323.3	16.3	54.1	452.4	116.9

~1994 data includes Chisago County only. Chisago merged with Isanti Heartland Express In June 1998

\*Prairie Five established 1995

\*\*In 1995, Sherburne County Transit became River Rider and expanded service to Wright County

\*\*\*Three Rivers/Hiawathaland Transit established on January 5, 1998.

~~1994 data includes Douglas County only. In June 1996, Douglas County Heartland Express became Rainbow Rider and expanded service to Grant, Pope, Stevens, and Traverse Counties

**1998 PERFORMANCE**

SYSTEM	FAREBOX RECOVERY RATIO	COST PER PASSENGER	COST PER REVENUE HR	REVENUE HRS PER CAPITA	PASSENGERS PER CAPITA	COST PER CAPITA	PASSENGERS PER REVENUE HR
Arrowhead	0.365	\$7.60	\$35.06	0.23	1.06	\$8.09	4.61
Chisago/Isanti	0.073	\$8.06	\$30.08	0.30	1.12	\$9.06	3.73
Prairie Five	0.101	\$9.27	\$21.77	0.25	0.58	\$5.39	2.35
River Rider	0.435	\$6.24	\$27.21	0.08	0.35	\$2.16	4.36
Semcac	0.165	\$7.45	\$26.45	0.02	0.08	\$0.57	3.55
Three Rivers (Hiawathaland Transit)	0.093	\$11.26	\$34.26	0.04	0.11	\$1.30	3.04
Tri-Cap	0.165	\$6.30	\$10.99	0.11	0.20	\$1.24	1.74
Tri-Valley	0.117	\$19.77	\$27.19	0.07	0.09	\$1.88	1.37
West Central Multi- County/Rainbow Rider	0.239	\$11.30	\$20.42	0.51	0.92	\$10.45	1.81
Western Community Action	0.200	\$9.50	\$37.82	0.20	0.80	\$7.63	3.98
<b>AVERAGE</b>	<b>0.195</b>	<b>\$9.68</b>	<b>\$27.13</b>	<b>0.18</b>	<b>0.53</b>	<b>\$4.78</b>	<b>3.05</b>

## Summary

Today, public transportation services have expanded to cover 64 counties and nine municipalities. Only seven counties are without any public transportation service compared to 21 counties just 10 years ago. Other highlights of public transportation service in Greater Minnesota include:

- In 1998, Greater Minnesota had 67 separate transit systems that provided nearly nine million rides per year using 500 vehicles.
- There were an estimated 800 people employed by these systems.
- The total cost to operate the services was about \$30 million.
- Each year about \$12 million is expended on capital items such as new vehicles, facilities and communications equipment.

Appendix B describes each of the 67 systems in detail.

The following are the key findings of the peer group analysis:

- Overall Greater Minnesota systems cost less to operate than their national peers.
- Many Greater Minnesota systems carry more passengers per hour of service operated than their national peers.
- Greater Minnesota systems provide less service per capita than their national peers.

## CHAPTER 3

### TRANSIT SERVICE NEED

This chapter describes the way in which service providers, community leaders, riders and the general public provided input to the development of the Greater Minnesota Public Transportation Plan. Service providers were asked to identify their service need as part of their annual funding application to Mn/DOT and through the completion of a special survey on need. Many service providers as well as community leaders and other agency representatives also participated in workshops held in their Mn/DOT district to discuss need. A number of key individuals from around the state were visited for one-on-one interviews to discuss transportation needs in Greater Minnesota. Prior to this plan, Mn/DOT performed a market research study consisting of telephone surveys, on-board rider surveys and focus group meetings in 1999 and 2000. This research work provided valuable input to this plan. Further, prior transit studies conducted in other areas throughout Greater Minnesota were also reviewed as input to the plan. Finally, a Steering Committee was formed with representatives from a wide range of Minnesota agencies. The Committee provided active participation throughout the project.

#### Service Need Identified by Transit Systems

One of the best sources of information regarding transit needs is through the individual transit system. Systems receive input from trip requests from riders and governing boards and advisory committees. A two-pronged effort was undertaken to obtain input from transit providers on their transit service as well as other needs. The first was to review the documentation that systems provide as part of their annual funding application to Mn/DOT. The Mn/DOT application requests the systems to list their current service and other identified transit needs. In addition, a questionnaire was sent to each system requesting specific information on transit needs.

Transit System Needs From Annual Application - The 2001 funding application from each transit system was reviewed for information on perceived service needs. Sixty-one systems described transit needs in their annual applications. As seen in Table 8, most of the systems noted a need for more service either with new routes and new or expanded dial-a-ride service. The second area of need related to an increase in service hours. Two systems noted the need for more staff and two other systems noted the need for more volunteer services. Seventeen of the 61 systems had no description of unmet need.

**TABLE 8**  
**NEED ANALYSIS FROM 2001 GRANT APPLICATIONS**

Transit Need	System Responses
More Service - New Routes	29
More Service - Expand/New Dial-A-Ride	11
More Weekday Hours - Evening	12
More Weekday Hours - Midday	1
More Weekday Hours - Early AM	1
More Weekend Service - Saturday	3
More Weekend Service - Sunday	4
More Weekend Service - Both Days	11
More Staff	2
Greater Volunteer Usage	2

No Suggestions	17
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A review of the span of service hours for the 67 different systems shows that only a limited amount of evening (after 6 p.m.) and weekend service is provided.

- Only nine of the 67 systems provide service on all weekdays after 6 p.m. three additional systems operate past 6 p.m. on only one or two weekdays.
- Seventeen of the 67 systems operate service on Saturday.
- Eleven of the 67 systems operate service on Sunday. Several systems operating Sunday service do not operate Saturday service.

Transit System Needs from Questionnaire - During the fall of 2000, a special questionnaire was sent to representatives of the 67 Greater Minnesota systems to give each system an opportunity to describe transit needs. This questionnaire addressed a number of issues. The results from the 47 systems responding to the special survey are summarized below:

- The first question asked systems to identify actions that could lead to productivity improvements. As seen in Table 9, 23 of the 47 systems that responded to this question indicated that more marketing was the best opportunity to improve productivity. Use of computer software to assist in operations function was also noted by many systems.

**TABLE 9  
ACTIONS THAT COULD LEAD TO PRODUCTIVITY IMPROVEMENTS**

Response	Number of Systems Responding	
	Non-Urban (30)	Urban (17)
More Marketing	15	8
Computer Software (Dispatching, Mapping, Scheduling, Tracking, GIS, Billing)	8	1
Promotional Activities	5	2
Central Dispatch Positions	3	-
Community Deviated Fixed Route	2	-

- The second question asked systems to list improvements that could be made to satisfy unmet need. As seen in Table 10, most of the need related to extending service hours operated, i.e., more weekend service, more evening service and expanded service hours. Five systems identified the need to expand the service area. Several other systems mentioned the need to focus on work trip and student transportation.

**TABLE 10  
UNMET TRANSIT NEED**

<b>Response</b>	<b>Non-Urban (30)</b>	<b>Urban (17)</b>
More Weekend Service	10	8
More Evening Service	6	5
Expand Service Hours	5	2
Expand Service Area	1	4
Transportation To/From Work	2	2
Improve Student & Children Ridership	3	-
Connecting Existing Systems	2	1
Inter-County Access To Specific Locations	-	2

- Question three asked systems to describe the types of coordination opportunities that might exist with other systems. As seen in Table 11, a number of different responses were given to this question with 5310/social service agency services having the largest number of responses. Systems noted that coordination with inter-community/Greyhound carriers was an important improvement opportunity.

**TABLE 11  
COORDINATION OPPORTUNITIES WITH OTHER PROVIDERS**

<b>Response</b>	<b>Non-Urban (30)</b>	<b>Urban (17)</b>
5310 Buses/Social Service	9	2
Inter-Community Carriers/Greyhound	9	2
School Districts	4	-
County Systems	3	1
Volunteer Driver Programs	4	-
Senior Homes	3	1
Taxi Service	2	-
Private For Profit Providers	2	-
Churches	2	-
Charter Services	2	-

- Question four asked about the need for transportation from inside the service area of the system to areas outside their service area. As seen in Table 12, 18 of the 47 systems noted an opportunity for coordination with neighboring county services.

**TABLE 12  
OPPORTUNITIES FOR INTERJURISDICTIONAL SERVICES  
TO AREAS OUTSIDE SERVICE AREA**

<b>Response</b>	<b>Non-Urban (30)</b>	<b>Urban (17)</b>
Neighboring County Systems	15	3
Inter-County	2	3
Inter-City	-	3
Ability To Cross State Lines	2	-

- Next, systems were asked to identify capital improvements that would improve service. As seen in Table 13, the need for more vehicles was by far the dominant capital need listed by 19 systems. Increased funding was in second place noted by eight systems. Facility needs were expressed in three different ways and overall were listed by nine different systems.

**TABLE 13  
CAPITAL NEED THAT WOULD IMPROVE SERVICES**

<b>Response</b>	<b>Non-Urban (30)</b>	<b>Urban (17)</b>
More Buses/Vehicles	18	1
Increase Funding	7	1
New Bus Storage Facilities	5	-
Office Space	3	-
Build "Rest & Rides"	3	-
Small Buses	2	-
Maintenance Facility	2	-
Transit Facility	2	-
Improve/Provide Bus Shelters	-	2

- The final question asked the systems to list any other concerns they had regarding transit programs in Greater Minnesota. This question was answered by 11 systems all addressing the need for more funding. Seven of these systems just noted that there was inadequate funding. Four other systems noted that budgets are not sufficient to keep up with the demands for service.

### **Summary of District Transit Workshops**

The first round of District Transit Workshops was conducted at each of Mn/DOT's Greater Minnesota districts between Tuesday, October 31, and Tuesday, November 14, 2000. As noted in the attendance lists included in Appendix D, the participants included members of the consultant team, transit system

operators, regional transportation planners, elected officials and Mn/DOT staff.

At each of the District Transit Workshops, a member of the consultant team and a representative of the Mn/DOT's Office of Transit facilitated the discussion.

The participants valued the opportunity to provide input to the Greater Minnesota Public Transportation Plan. Overall, the participants were enthusiastic and appreciated the opportunity to comment on the results of some of the earlier portions of the planning process. One overarching theme that emerged was that the Greater Minnesota transit systems should undertake a more focused effort in to be recognized for the good job they are doing and to demonstrate the need for increased funding.

The findings from the first district workshops as well as the list of attendees are detailed in Appendix D to this plan. Many pertain to the service guideline concepts. Some of the key comments include:

- Funding for more evening and weekend service would be useful, especially in the more “urban” areas.
- Could there be more coordination of the use of 5310 vehicles between social service providers and transit agencies?
- The type of service operated is decided without the use of specific criteria - there is no “formula.” It would be nice to have some guidance in this area.
- Some guidelines on fare structure would also be appreciated.
- Demand level standards for out-of-area trips would be useful.
- “Break-in” period for new start systems or new routes should be defined, along with a method for new systems to implement new services or new routes.
- There should be separate standards for complementary ADA paratransit services mandated by the Americans with Disabilities Act.
- Guidelines regarding trip denials would be useful. The guidelines should include a clear definition of what constitutes a trip denial. In addition to trip denials, referrals to other transportation providers should be tracked.
- Guidelines regarding the appropriate level of subscription riders may be useful, as would guidelines specifying the waiting time for a return trip.
- The overall quality of service - especially on-time performance - and safety should always be the first priority of the transit systems.
- The existence of performance measures should help operators increase their credibility.

- Many operators already meet or exceed many of the proposed guidelines.
- The guidelines should present a range of options rather than focusing on one or two. The word “guidelines” (instead of “standards”) would be more useful at the state level. The term “standards” would be more appropriate at the local level. Standards should be defined locally.
- One bus in a county does not really meet the definition of “public transit.”

An important by-product of the initial workshops was the sharing of information among the participants, particularly about operating issues. Workshop presentations also showed the results from the surveys, leader interviews and the peer group analysis. It was learned that Minnesota transit systems, on average, cost less and are more productive than their counterparts in other states. However, they achieve this strong performance by providing less service per capita.

A second round of workshops was held in late April and early May 2001 to present the plan results to date. A similar format was followed: a formal presentation on progress followed by discussion with the Mn/DOT staff and consulting team. Again, one workshop was held in each of the Mn/DOT Districts in Greater Minnesota.

The presentation of the plan findings described transit need, including type of service, number of annual hours of service and number of additional vehicles. Three different approaches to meeting the need were identified:

- Improve efficiency
- Coordinate with other providers (i.e., 5310)
- Provide more resources to the existing systems to operate more service

The second workshop also presented service performance guidelines and suggested how they would be applied to the individual systems to determine service changes, if needed.

Key comments made by those in attendance at the second round of district workshops are summarized below:

- How well systems perform with respect to the levels specified in the transit performance guidelines must not become a criterion for funding transit services.
- It should be clearly stated in the final plan that the levels specified in the performance guidelines are to be reviewed by the transit systems and used as a guide to set their own standards. It should also be stated that they are not the levels that the state mandates that they must achieve.
- It was suggested that the telephone number for TDD be included in the performance guideline document.

- Volunteers are a key part of the mobility options in a number of systems. Several attendees wanted to know whether there will be increased funding for volunteer services.
- There was agreement at several workshops that a key transportation issue is the lack of coordination, as well as duplication of service, with 5310 providers.
- Comments at several workshops related to the need to update the analysis in the plan to use 2000 U.S. Census data as well as more recent statistics for the transit operators.
- Several of those in attendance felt that consideration should be given to establishing funding priorities.
- The use of 80 percent as the threshold level was questioned in the context that a higher target level might be appropriate for a growing system.
- There were a number of attendees that questioned the other category of services that were used to offset the need that was not being fulfilled by the Minnesota public transportation systems. Discussions ranged from 5311 operators, to those that provide Medical Assistance (MA) services to those that provide school bus services such as Head Start.

In summary, there were no comments that refuted the method developed in this plan for identifying transportation need. There were also many positive comments regarding establishment and future use of performance guidelines.

## **Leader Interviews**

One of the first activities in this planning process was to meet with key individuals throughout Greater Minnesota. The Office of Transit assisted the plan team in identifying “stakeholders,” community leaders who should be contacted for their opinions regarding public transportation. The plan team arranged interviews with 19 individuals. Their names and affiliations are listed below. These leader interviews were held in September and October 2000. It should be noted that other people were interviewed later in the project but not in the formal basis as the initial round of interviews.

Ms. Donna Allan	Director, Mn/DOT Office of Transit
Mr. Keven Anderson	District Project Manager, Mn/DOT, Detroit Lakes
Ms. Linda Bair	Transit Coordinator, Hubbard Co. Soc. Services
Ms. Linda Bedeau	Director of Tribal Planning, Red Lake Indian Reservation.
Mr. Lee Coe	Chair, Bemidji Transit Commission
Mr. Kent Ehrenstrom	District Project Manager, Mn/DOT, Bemidji
Mr. John Ellenbecker	Chair, Area Transp. Partnership/St. Cloud City Council

Ms. Paula Erdman	Director, Tri-Cap Community Action Program
Mr. Hal Freshley	Planning & Policy Coordinator, MN Board on Aging
Mr. Randall Halvorson	Director, Mn/DOT Program Delivery Group
Mr. Mark Hoisser	VP/Executive Director, DARTS
Mr. Wayne Hurley	Transportation Planning Specialist, West Central Initiative
Mr. Gordon Hydukovich	Community Development Director, City of Fergus Falls
Mr. Harold Jennissen	Douglas County Commissioner
Ms. Heather Karolus	Transit Supervisor, RiverRider
Mr. Lee Kessler	Asst. District Engineer, Mn/DOT, Detroit Lakes
Mr. Julian Lescalzo	Lobbyist, MN Transportation Alliance
Mr. Noel Shughart	Principal Planner, Mn/DOT Office of Transit
Mr. Clifford Tweedale	Regional Planner, Headwaters Reg. Planning Agency

Each interview was conducted in person by the plan team, many at locations throughout Greater Minnesota. After introductory remarks and an overview of the stakeholders' role regarding public transportation services, a standard list of questions was asked. Some of the key points raised in these discussions include:

- There is a perception that the primary clientele and focus of most of the existing transit systems in Greater Minnesota are senior citizens and people with disabilities. The existence of public transportation enables seniors to remain in their own home, maintaining their independence.
- There is a need to expand service.
- The transit systems should be accommodating work trips. These trips are made during hours sometimes beyond the service hours of the transit systems. And some employers (i.e., factories/processing plants, hospitals and nursing homes, casinos) operate three shifts, seven days a week, for which there is limited transit service. The work trips include those needed by participants in welfare to work programs.
- People need to make trips out of their area. In some cases, you have to leave the area to get to medical care.
- There is a need to access Greyhound intercity service, to permit longer trips by those without cars.
- There is growing demand for these services. The population is aging. Many people are opting to move to or remain in smaller towns and rural areas as a lifestyle choice.

- The state has been generous in its funding of public transportation. People can see the results of Mn/DOT's efforts.
- The decentralization of the staff is an excellent idea, and has made the program even better. The District Project Managers fill a variety of roles; including oversight, funding assistance, and general technical support.
- If additional funds were to be made available from Mn/DOT, the interviewees thought they should be used first to expand service to meet latent demand. The next priority should be to expand service hours and service areas.

## **Market Research Study**

As part of the statewide transit planning process, Mn/DOT undertook an extensive marketing study to develop profiles of transit users and non-users in order to understand the effectiveness of current transit marketing efforts. The study consisted of several components:

- Focus Groups were held of both transit users and non-users.
- Random Sample Survey – A random phone survey of 810 respondents was conducted during January and February 2000. Among the respondents, 44 percent said that local bus service for the general public was available in their community. Six percent have used some form of local bus service in the last 12 months.
- On-Board Survey – Each of the transit systems conducted an on-board survey to develop a profile of current users of transit service in Greater Minnesota. More than 4000 surveys were gathered as part of this activity.

The conclusion from the study was that there were three market clusters identified as possible candidates for whom new service could be marketed. The best candidates have a quest for all types of information, from all sources; have more reasonable level of expectations, and are likely to consider using the service. They make up 40 percent-50 percent of all respondents.

The plan team reviewed the results of the market research study. The results supported needs expressed by the rider and non-user of transit services in Greater Minnesota.

## **Prior Transit Studies**

Another input to this plan was a review of previous transit studies completed in urban areas throughout Greater Minnesota. Past studies addressed transit plans in the following four areas:

Fargo/Moorhead  
Mankato  
St. Cloud

Other documents reviewed as part of this plan included:

- *Moving Minnesota from 2000 to 2020*, Mn/DOT, January 2000
- Minnesota's 2000-2002 State Transportation Improvement Plan (STIP), Mn/DOT September 1999
- *Statewide Interregional Corridor Study*, SRF Consulting Group, Inc., November 1999
- *Transit Services, A Program Evaluation Report*, Office of the Legislative Auditor, February 1998

### Steering Committee

Finally, a Steering Committee was formed composed of representatives from a variety of state and local agencies. This committee, was formed to review the information developed in the plan, commented on changes they felt should be accomplished to make the plan a better product. Steering Committee members included:

Donna Allan	Mn/DOT, Office of Transit
Ryan Brooks	MPO, Grand Forks
Linda Elfstrand	Tri-CAP, St. Cloud
Rodger German	RDC, Staples
Deb Little	Northfield Transit Service
Harlan Madsen	Association of Counties
Don Westergard	Council on Disability
Dale Maul	Mn/DOT District 6
Al Schenkelberg	Mn/DOT Office of Investment Management
Carolyn Tasker	Board on Aging
David Tripp	St. Cloud MTC
Al Vogel	Mn/DOT, Office of Freight Rails and Waterways
Bill Ziska	LeSueur County DAC

### Summary

From this review, five key findings were identified:

- There are seven counties and seven small urban areas without some form of public transportation.
- In most communities, transit service ends by late afternoon or early evening. In fact, only 11 of the 67 systems operate after 6 p.m.

- Most services operate only Monday through Friday. Only about one-quarter of the systems operate on Saturday and only 11 operate on Sunday.
- Because of limited resources, trips are confined to political boundaries, such as city or county lines.
- Again, because of limited resources, many systems are in need of new transit facilities, radio communication systems and upgraded computer systems.

In summary, despite their strong performance, the transit systems have not been able to meet all of the mobility need in Greater Minnesota. Expanded services to meet these needs cannot be considered with the current level of federal, state and local funding.

## **CHAPTER 4**

### **TRANSIT NEEDS ASSESSMENT**

This chapter presents estimates of the 2010 transit need in Greater Minnesota. The estimates are based upon data on current transit services and population and demographic information projected for the year 2010. The estimates assume that transit should be, and will be, available in all 80 counties of Greater Minnesota, and that these services will be provided according to Mn/DOT performance guidelines set forth in this plan.

The needs assessment consists of four parts:

- Estimation of Transit Need in Greater Minnesota – Using ridership and vehicle hours from existing services, along with the population served by each system, a methodology was developed by the consultant team for the estimation of need in each county and urban center in Greater Minnesota.
- Methods for Meeting Unmet Need – After identifying the gap between current and potential ridership for each county and urban area, a methodology was developed by the consultant team to measure the gap. The procedure involves three primary components:
  1. Improving the efficiency of current operators
  2. Maintaining coordination and cooperation with other transportation services
  3. Providing additional public transportation resources
- Definition of Mn/DOT Transit Service Goal for Greater Minnesota – Based upon a review of the levels of investment required to meet various levels of unmet need, from 70 percent to 100 percent, the plan defines a transit service goal for Greater Minnesota that will guide future investments in existing and new services. The goal for 2010 is targeted at meeting 80 percent of the need.
- Projected Operating Costs and Capital Need – This section describes how the resources needed to provide additional trips were estimated, including operating costs, and vehicle needs and costs.

#### **Estimating Transit Need in Greater Minnesota**

In estimating the level of need in Greater Minnesota it was necessary to identify a reasonable set of data that could be used to identify transit need corresponding to objectives of the plan, size of the area, and

confines of the plans' scope. A methodology sensitive to those key variables, which defines the basic service characteristics, is also needed to meet the objectives of this plan:

- Identify and quantify the transit need in Greater Minnesota
- Identify the degree to which this need is being met today (2000)
- Identify the level of resources that need to be programmed to achieve Mn/DOT's public transportation goal for Greater Minnesota

While there is a great deal of national research on transit needs identification, there is very little on quantification of transit need at a statewide level. The most appropriate models to consider were demand estimation models used for route and service planning. The methodology for the state plan uses a variation of a demand estimation model to calculate statewide transit need. The plan's model is based on the following assumption: the type of service provided and the level of ridership for a particular system is highly influenced by the population size and population characteristics of the service area. It uses the key variables of the population and population characteristics of each service area and the quantity of service, measured by vehicle hours of service.

There are other factors that affect transit usage, including percent of elderly population, income, trip generators, and service quality. The Transportation Research Board, a part of the National Academy of Sciences, publishes transit research periodically. Their report, *Workbook For Estimating Demand For Rural Passenger Transportation*, describes a model for forecasting service area demand that is based on gathering this type of specific information on social service programs and services, transportation provider specific operations, and detailed population characteristics. In the absence of this detailed information, the model recommends basing demand on the total population. This type of detailed data will be collected and analyzed as part of Mn/DOT's transit planning program consistent with of district and local level plans.

Total population and population density are key variables determining the type of service appropriate to a given area. A highly populated metropolitan area like Duluth or St. Cloud characteristically can support a fixed route bus service; a low population county such as Hubbard County or Roseau County can support demand response services, volunteer programs, and, in some cases, route deviation services.

Community Categories - The first step in the methodology was to sub-divide Greater Minnesota into community categories reflecting the type of public transit service offered and respective population characteristics. In this manner, communities of a similar type and setting are compared to each other. The following is a brief description of the community categories.

- Large Urban > 50,000 Population - The transit systems operating fixed route and ADA complementary paratransit service in large metropolitan areas (e.g. Duluth, St Cloud, Rochester).
- Small Urban 18,000 to 50,000 Population - Systems that operate demand response or route deviation service. Includes cities that are part of larger metropolitan areas that operate fixed route and ADA complementary paratransit service (e.g. Moorhead, Mankato).

- Small Urban 10,000 to 18,000 Population - Systems that operate demand response service or route deviation service (e.g. Brainerd, Virginia).
- Small Urban < 10,000 Population (level 2 & 3 trade center) - Systems that operate demand response or route deviation service. Includes cities that are served by a county or multi-county system with community-based service three days per week.
- Small Urban < 10,000 Population (level 4 & 5 trade center) - Systems that operate demand response service. Includes cities that are served by a county or multi-county system with community-based service three days per week.
- County/Multi-County - Systems that operate demand response or route deviation service. Includes counties with no public transportation service. Does not include cities served by community-based service three days per week.

In all, there were six categories created for the analysis as shown below in Table 14.

**TABLE 14**  
**GREATER MINNESOTA COMMUNITY CATEGORIES**

<b>Community Categories (System Type/Population)</b>	<b>Number of Greater Minnesota Communities</b>
Large Urban > 50,000	3
Small Urban 18,000 to 50,000	7
Small Urban 10,000 to 18,000	12
Small Urban < 10,000 (level 2 & 3 trade center)	11
Small Urban < 10,000(level 4 &5 trade center)	16
County/Multi-County	53

The level of public transportation service offered in these areas is related not only to the type of service provided, but also to the number of people needing the service, and the availability of resources to provide it. In turn, the type of service provided and service area population is a highly significant predictor of the amount of service consumed, as measured by passenger trips.

In the methodology for the plan, the relationship between level of service and trips are expressed by two variables – revenue hours per capita, as a measure of the amount of service offered, and passenger trips per capita, as a measure of the amount of service consumed. The use of per capita measures, for level of service and trips provided, allows for the development of the model itself.

Service Delivery Profile Curve - Data for revenue hours per capita and trips per capita were developed using the peer group data described in earlier chapters. The current public transit systems were categorized into the six community types and the data plotted on a scatter plot diagram for each. A service delivery profile curve was then created from each data set, which describes the relationship

between the two variables and shows the “average” predicted relationship between the two variables (Figures 10 through 15). Any point below the curve suggests a system is not performing up to expectation; i.e., it is providing too few trips for the amount of resource expended. Conversely, any system whose point is above the curve is outperforming the “average,” i.e., providing more than the predicted number of trips for the resources expended.

SERVICE DELIVERY PROFILES

FIGURE 10  
LARGE URBAN/LEVEL 1 TRADE CENTER

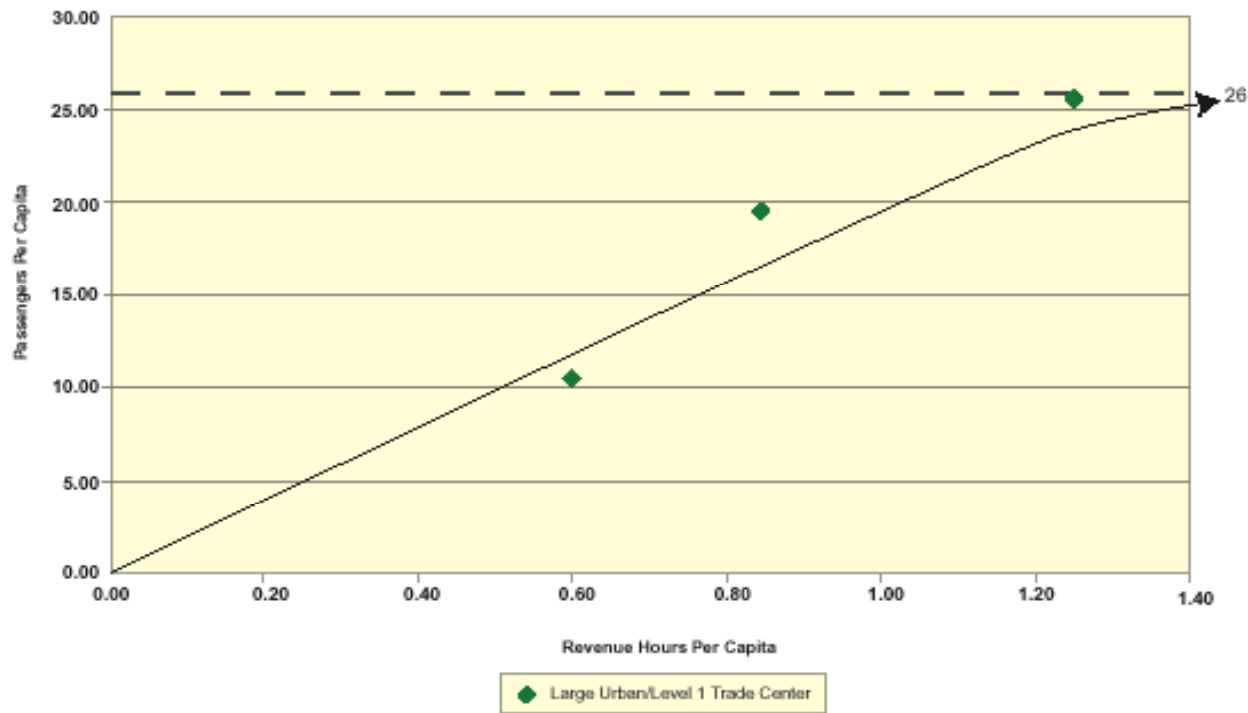


FIGURE 11  
SMALL URBAN18, 000-50,000

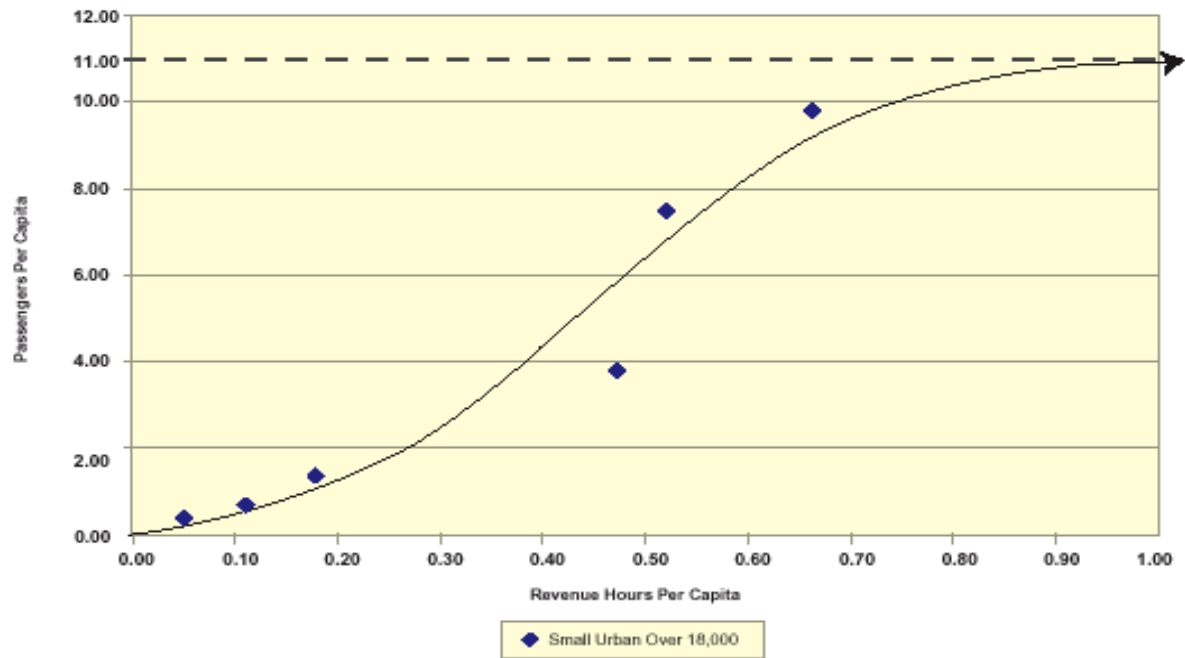


FIGURE 12  
SMALL URBAN 10,000 – 18,000

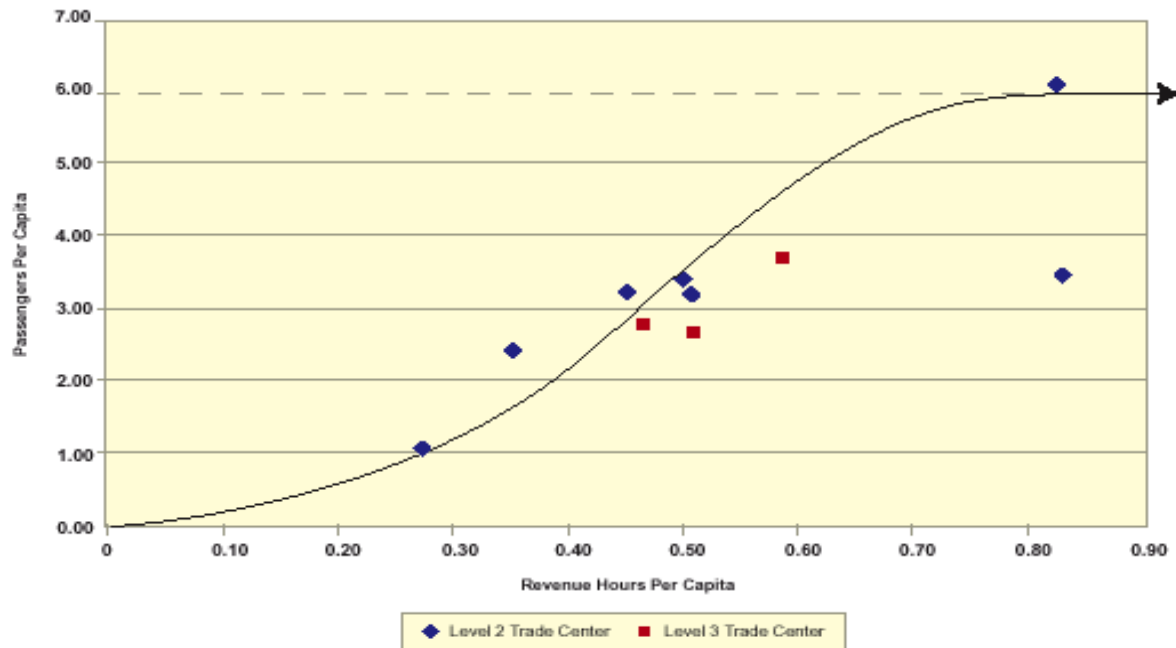


FIGURE 13  
SMALL URBAN < 10,000 (LEVEL 2 & 3 Trade Centers)

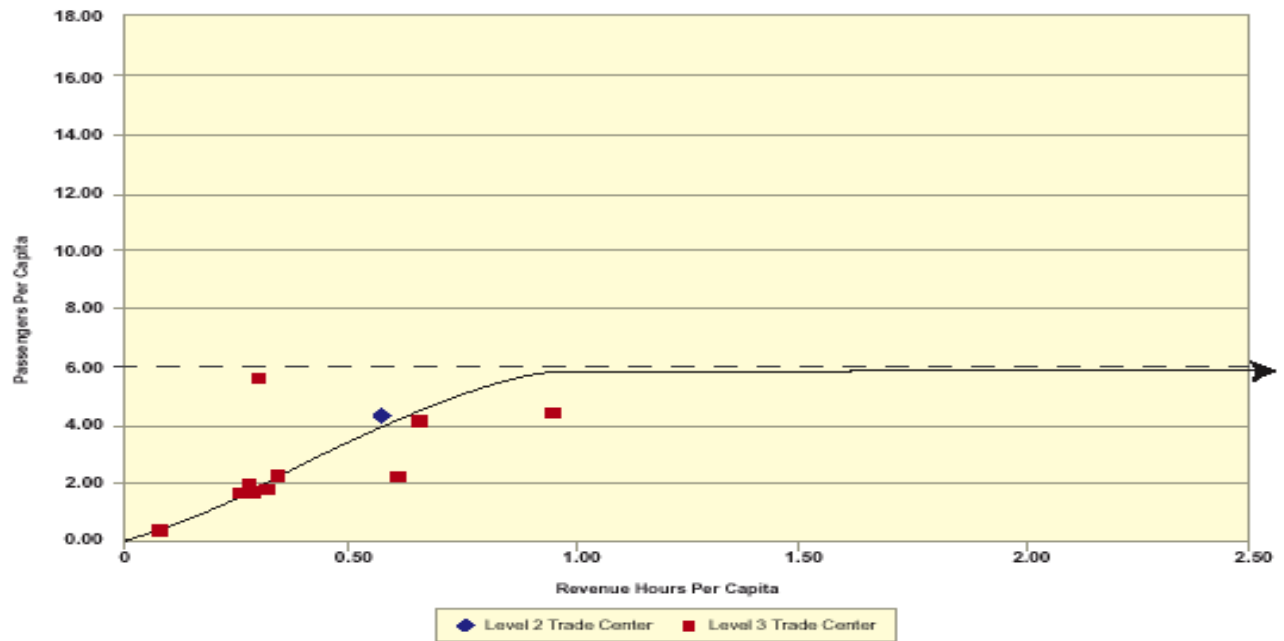


FIGURE 14  
SMALL URBAN < 10,000 (Level 4 & 5 Trade Centers)

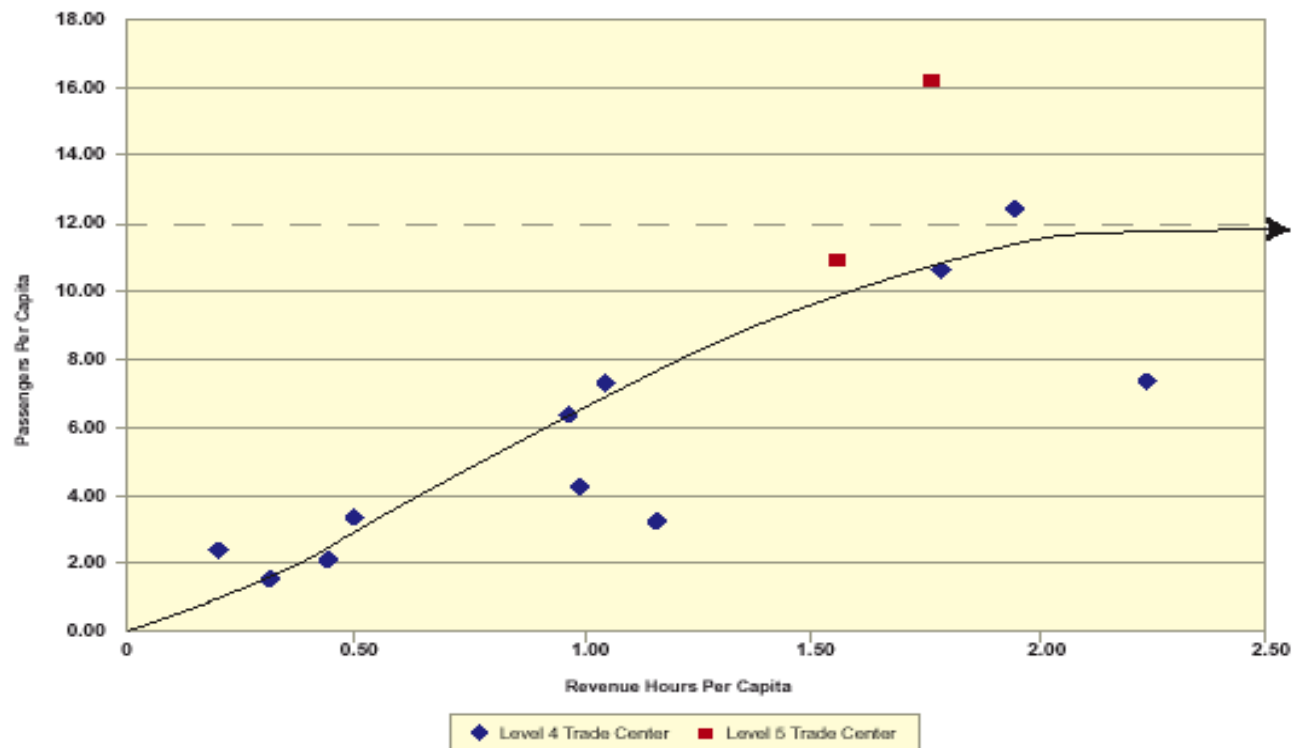
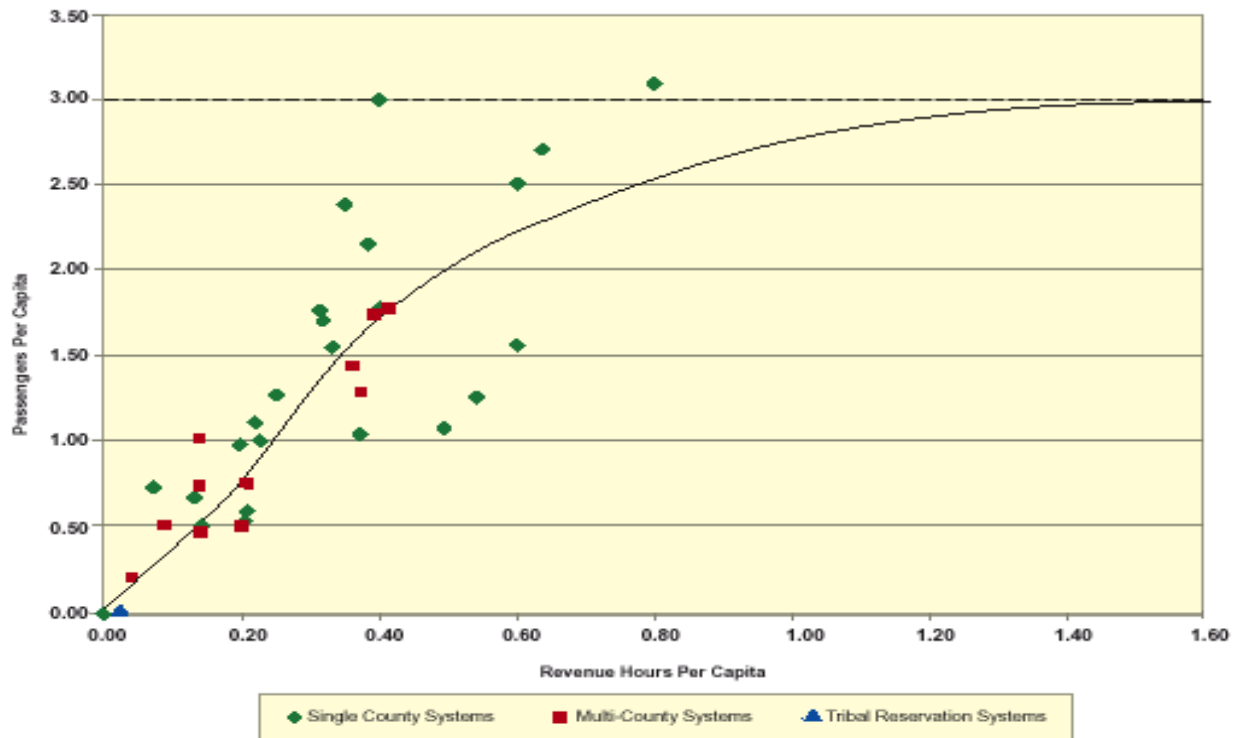


FIGURE 15  
COUNTY/MULTI COUNTY



The curves differ for each group depending upon the relationship between community types, type of service offered, and comparative level of resources spent. Most importantly, each of the curves flattens out as the level of resources increases, indicating that the number of trips produced by each succeeding unit of input eventually reaches a saturation point. At the point where the curve becomes horizontal, conceptually the need has been met, and any additional resources would result in lower productivity. The concept of diminishing returns suggests that the most productive use of resources is not at 100 percent of need, but rather at a point where a lower portion of need is met, somewhere in the 70 percent to 90 percent range. These relationships are important, and are used in later steps to determine the Mn/DOT goal for meeting transit need in Greater Minnesota.

**Need Per Capita** - Each of the six community types, therefore, has an average trip potential, the point along the Service Delivery Profile curve where the productivity line flattens, expressed in passengers per capita. This trip potential or “need” is based on performance by Minnesota systems as well as the performance of nationwide peer systems. For the largest urban areas, the trip potential is 26 passenger trips per capita; for small urban areas with populations between 18,000 and 50,000, the trip potential is 11 passenger trips per capita. The per capita trip potential for ADA complementary paratransit service is .6 passenger trips per capita. Need per capita generally decreases as population and density decrease, with the exception of the set of small urban areas with populations fewer than 10,000 persons which are Level 4 or 5 trade centers. Because the subsequent steps in the methodology consider other providers in determining resource allocations, no adjustments were made to these data for the analysis. Subsequent district or local level studies can further clarify these numbers as the state moves forward with its plan. Similarly, there are a few systems that provide trips in excess of the trip potential for their community; these are systems that may carry agency-related trips and can be studied in further detail at a later date. Need by community type is listed below in Table 15.

**TABLE 15  
NEED PER CAPITA BY COMMUNITY TYPE**

<b>Community Type (System Type/Population)</b>	<b>Need Per Capita</b>
Large Urban / > 50,000	26
Small Urban / 18,000 to 50,000	11
Small Urban / 10,000 to 18,000	6
Small Urban / < 10,000 (level 2 & 3 trade center)	6
Small Urban / < 10,000 (level 4 & 5 trade center)	12
County/Multi-County	3
ADA Complementary Paratransit	< 1

Transit Need - The estimated trip potential, expressed as need per capita for each of the six community types, when multiplied by the 2010 population of each Greater Minnesota community, results in the 2010 estimate of need for Greater Minnesota (16,733,251 trips). A summation of the community need by Mn/DOT District is presented in Table 16.

Estimated 2010 Ridership - The second part of step one is to calculate the transit system ridership for 2010 if the number of service hours were maintained at the 2000 service level. The estimated ridership for 2010 is calculated by multiplying the 2000 passenger per capita productivity by the 2010 population of each Greater Minnesota community. Table 16 shows the predicted trips carried by each provider in 2010.

**TABLE 16  
TRANSIT NEEDS BY AREA**

<b>Area</b>	<b>2010 Population</b>	<b>2010 Trip Need</b>	<b>Estimated 2010 Ridership</b>	<b>Percent Ridership Met</b>
District 1	255,710	972,918	519,173	53.4
District 2	158,302	547,011	256,192	46.8
District 3	534,519	1,944,587	377,537	19.4
District 4	226,079	765,366	333,116	43.5
District 6	387,732	1,827,903	436,302	23.9
District 7	248,330	1,215,799	616,201	50.7
District 8	237,119	805,665	427,340	53.0
Duluth	122,535	3,129,343	3,129,343	100.0

East Grand Forks	8,040	48,240	21,785	45.2
St Cloud	88,101	2,343,486	1,826,977	78.0
Moorhead	34,978	405,744	363,820	89.7
Rochester	116,149	2,669,637	1,292,440	48.0
La Crescent	4,796	57,552	7,144	12.4
<b>Statewide Total</b>	<b>2,422,390</b>	<b>16,733,251</b>	<b>9,607,370</b>	<b>57.4</b>

### Methods for Meeting Unmet Need

At the conclusion of the first step in the methodology each of the communities, including those with and without services, will have an identified 2010 estimate of trips provided and an estimate of public transit need. At the state level, the respective numbers are 9,607,370 trips provided and a need of 16,733,251 trips. Thus, the current network of services, operated in a similar manner and with the same level of service in 2010, would meet 57.4 percent of transit need in Greater Minnesota. The next step in the process is to determine the gap to fill between predicted trips carried by each provider in 2010 and the need in their respective service areas.

The transit need on a district-wide basis is shown in Table 16, along with the estimated number of trips provided in each district. The resulting difference is the unmet need in each area and for Greater Minnesota as a whole. Note that overall need for the urban systems includes that of ADA mandated paratransit services.

However, it does not account for future growth of the urban systems as a result of service expansion to outlying communities. For the urban systems, a separate detailed transit plan is necessary to account for specific changes and need. For example, expansion of urban systems to outlying areas may involve a service delivery method different from traditional fixed route services.

Assuming each system continues to meet the same level of trips, there are three ways to fill the unmet need gap, and each will be considered in the plan.

Increase Service Efficiency - As described in the methodology, any system whose performance falls below the service delivery profile curve is operating less efficiently than the expectation for the group of services in the same category. Therefore, it assumes each of these systems can, through operating changes, management reviews, or other studies, increase overall productivity (trips per service hour) to reach a point on the curve commensurate with the resources available. Many systems exceed the expectations suggested by the curve.

Through service efficiency alone, the systems in Greater Minnesota can provide an additional 325,254 trips (Table 17), decreasing the ridership need gap by 1.9 percent. The small change reinforces the findings from the peer assessment that, on the whole, the network of services in Greater Minnesota is operating very productively.

**TABLE 17**  
**RIDERSHIP GENERATED BY EFFICIENCY IMPROVEMENTS**

Area	2010 Need	(Number of Additional Trips)	Efficiency Improvements (Percent)
District 1	972,918	16,672	1.7
District 2	547,011	23,852	4.4
District 3	1,944,587	54,912	2.8
District 4	765,366	17,170	2.2
District 6	1,827,903	74,595	4.1
District 7	1,215,799	22,990	1.9
District 8	805,665	57,790	7.2
Duluth	3,129,343	0	0.0
East Grand Forks	48,240	2,335	4.8
St. Cloud	2,343,486	0	0.0
Moorhead	405,744	0	0.0
Rochester	2,669,637	54,888	2.2
La Cresent	57,552	50	0.1
<b>Statewide Total</b>	<b>16,735,261</b>	<b>325,254</b>	<b>1.9</b>

Other Public Transportation Resources - The public transit systems described in this plan are not the only providers of passenger transportation in Greater Minnesota. Other agencies, including Section 5310 eligible providers, operate agency-based transportation services. Some of these services may be operated due to a lack of public transportation. The trips generated by services that would not be necessary with the presence of adequate public transportation are considered to be meeting a portion of the transit need. The analysis calculated this impact by collecting data from representative Mn/DOT districts to estimate the level of unmet need addressed by agency-based services. For the analysis, 30 percent of the trips provided by agency-based services were assumed to be for public transportation trips, while 70 percent were not included. Agency-based trips in urban areas with both fixed route services and complementary paratransit service were not considered as meeting a portion of the public transportation need. The agency-based providers carry approximately 1,655,166 trips in Greater Minnesota that could be provided by public transportation, representing 10 percent of the need. The amount of need met by these services is estimated to vary from as high as 35.5 percent in District 4 to as low as 4.4 percent in District 1.

The Mayo Clinic Commuter Service in Rochester provides an extensive network of fixed route commuter based services to and from its facilities. Trips are provided to residents both within the city, including between the city's downtown transit center and Mayo facilities, and from surrounding counties. The Mayo Clinic Service was incorporated in the plans needs analysis as meeting a portion of the need in District 6 and the City of Rochester. A total of 1,217,400 trips are provided annually, representing another 7.4 percent of the unmet need in Greater Minnesota.

**TABLE 18**

## RIDERSHIP FROM OTHER PUBLIC TRANSPORTATION RESOURCES

District	2010 Trip Need	Other Providers	Mayo Clinic Service	Other Providers (% Need Met)	Mayo Clinic (% Need Met)
District 1	972,918	43,181	0	4.4	0.0
District 2	547,011	42,726	0	7.8	0.0
District 3	1,944,587	448,675	0	23.1	0.0
District 4	765,366	271,605	0	35.5	0.0
District 6	1,827,903	456,977	440,000	25.0	24.1
District 7	1,215,799	294,858	0	24.3	0.0
District 8	805,665	91,248	0	11.3	0.0
Duluth	3,129,343	0	0	0.0	0.0
East Grand Forks	48,240	5,896	0	12.2	0.0
St Cloud	2,343,486	0	0	0.0	0.0
Moorhead	405,744	0	0	0.0	0.0
Rochester	2,669,637	0	777,400	0.0	29.9
La Crescent	57,552	0	0	0.0	0.0
<b>Statewide Total</b>	<b>16,733,251</b>	<b>1,655,166</b>	<b>1,217,400</b>	<b>10.0</b>	<b>7.4</b>

**Additional Resources** – Even after ensuring that each system is operating at or above the service delivery profile curve for its category, accounting for trips provided by agency-based services, and accounting for the trips provided by the Mayo Clinic, there will still be a gap between the number of trips provided and the transit need of Greater Minnesota. This gap is estimated to be approximately 3,990,143 trips as shown on Table 19. (Put another way, the present network of services, with efficiency improvements and including agency-based services and Mayo Clinic services, meets about 76.2 percent of the transit need in Greater Minnesota.)

The 3.99 million trips are the remaining trips that will require additional resources – more hours of service, more vehicles, and in some locations new systems. The question remaining is how to determine what level of additional resources is most efficient in delivering more trips. As discussed earlier, every system reaches a point at which additional resources provide fewer and fewer trips, rendering more spending relatively ineffective.

**TABLE 19  
RIDERSHIP GAP**

District	2010 Trip Need	Trip Need Met By Existing Resources	Total Gap
District 1	972,918	579,026	393,892
District 2	547,011	322,770	224,241

District 3	1,944,587	881,124	1,063,463
District 4	765,366	621,891	143,475
District 6	1,827,903	1,407,874	420,029
District 7	1,215,799	934,049	281,750
District 8	805,665	576,378	229,287
Duluth	3,129,343	3,129,343	0
East Grand	48,240	30,016	18,224
St. Cloud	2,343,486	1,826,977	516,509
Moorhead	405,744	363,820	41,924
Rochester	2,669,637	2,069,840	599,797
La Crescent	57,552	7,194	50,358
<b>Statewide</b>	<b>16,735,261</b>	<b>12,743,108</b>	<b>3,990,143</b>

### Definition of Mn/DOT Transit Service Goal for Greater Minnesota

Following discussions with Mn/DOT staff and the Steering Committee for the plan, the consulting team tested a number of scenarios. Scenarios were developed for 70, 80, 90 and 100 percent thresholds. The detailed results from this review of these various scenarios are contained in Appendix E. The results are presented by District as well as by the systems that comprise each District.

A review of the results indicated that the most efficient use of resources occurred when the target was set at 80 percent. An 80 percent target means that:

- Systems serving communities that have more than 80 percent of their need met will continue to receive the resources appropriate for maintaining that level.
- All current systems serving communities with less than 80 percent of the need met will be given the appropriate resources to carry additional trips.
- Unserved communities will be served by new services designed with sufficient resources to meet 80 percent of their identified need.

It was determined that the optimum Mn/DOT goal is to develop, over time, a program which meets 80 percent of the transit need in all 80 counties of Greater Minnesota. The timeframe to meet this level is 2010. Meeting a minimum of 90 percent of the need in all 80 counties is established as a 2020 goal.

As shown in Table 20, the 80 percent target in all 80 counties will result in 15.6 million trips, meeting 93.4 percent of the statewide need of 16.7 million trips. The statewide percentage is higher because several

communities' 2010 projected ridership exceeds the 80 percent target. Attainment of the 80 percent goal will require that the state increase the resources spent on public transportation in Greater Minnesota to accommodate 1.6 million trips. The next section provides estimates of these resources, in terms of operating dollars, expansion vehicles, and capital costs.

**TABLE 20**  
**TRANSIT NEED TO MEET 80 PERCENT GOAL**

District	2010 Ridership Need (80%)	Estimated 2010 Ridership	Efficiency Improvement	Other Providers	Mayo Clinic Service	Expansion Ridership	Riders Above Target	Total Ridership
District 1	778,334	519,173	16,672	43,181	0	202,417	3,109	781,443
District 2	437,609	256,192	23,852	42,726	0	151,236	36,397	474,006
District 3	1,555,670	377,537	54,912	448,675	0	694,373	19,827	1,575,497
District 4	612,293	333,116	17,170	271,605	0	8,283	17,881	630,174
District 6	1,462,322	436,302	74,595	456,977	440,000	238,391	183,943	1,646,265
District 7	972,639	616,201	22,990	294,858	0	154,343	115,753	1,088,392
District 8	644,532	427,340	57,790	91,248	0	118,078	49,924	694,456
Duluth	2,503,474	3,129,343	0	0	0	0	625,869	3,129,343
East Grand	38,592	21,785	2,335	5,896	0	8,576	0	38,592
St. Cloud	1,874,788	1,826,977	0	0	0	47,811	0	1,874,788
Moorhead	324,595	363,820*	0	0	0	0	39,225	363,820
Rochester	2,135,709	1,292,440	54,888	0	777,400	10,981	0	2,135,709
LaCrescent	46,042	7,144	50	0	0	38,848	0	46,042
<b>Statewide Total</b>	<b>13,386,599</b>	<b>9,607,370</b>	<b>325,254</b>	<b>1,655,166</b>	<b>1,217,400</b>	<b>1,673,337</b>	<b>1,091,928</b>	<b>15,632,550</b>

### Projecting Operating Costs and Capital Need

The previous sections have described the methodology employed to estimate transit need in Greater Minnesota, and the number of trips that need to be added to the network to reach the target of meeting 80 percent of the identified need.

The last section concluded by stating that the state needs to contribute sufficient resources to provide an additional 1.6 million trips per year by 2010. This section translates these trip levels into estimates of additional operating and capital costs.

Once each system has reached or exceeded its efficiency target, providing additional trips requires additional hours of service. Providing service to previously unserved communities will require additional vehicle hours of service. To translate ridership to hours of service, a set of productivity standards for each system type - fixed route, route deviation, complementary paratransit and demand response - was used. These figures are shown below in Table 21.

**TABLE 21**  
**PASSENGER PER HOUR STANDARD FOR EACH SYSTEM TYPE**

<b>System Type</b>	<b>Urban</b>	<b>Rural</b>
Fixed Route	20	N/A
Route Deviation	8	5
ADA Paratransit	4	N/A
Demand Response	5	3

Since the passenger trip estimates are made on a community level basis, estimates of new trip needs are translated into additional hours of service for each of the communities that are part of the analysis. Table 22 presents a summation by district of the number of hours needed to meet 80 percent of the 2010 transit need for all of the communities in Greater Minnesota. Once a level of additional hours of service is defined for each community, the total operating budget is calculated by using the systems' 2000 operating cost for currently served communities. An average hourly operating cost is used for unserved communities, based upon the type of community to be served and service type. Operating costs are presented in Table 23. All costs are presented in year 2000 dollars.

**TABLE 22**  
**2010 OPERATING HOURS TO MEET 80 PERCENT NEED**

<b>Area</b>	<b>Estimated Base Hours</b>	<b>Additional Hours Needed Cost</b>	<b>Total Hours</b>
-------------	-----------------------------	-------------------------------------	--------------------

District 1	104,557	45,706	150,263
District 2	59,739	31,659	91,398
District 3	79,748	200,906	280,654
District 4	72,119	16,444	88,563
District 6	70,822	59,451	130,274
District 7	80,326	55,293	135,619
District 8	80,610	45,887	126,497
Duluth	174,139	0	174,139
East Grand Forks	3,733	430	4,163
St. Cloud	100,508	5,976	106,484
Moorhead	30,686	0	30,686
Rochester	78,387	8,158	86,545
La Crescent	1,614	4,856	6,470
<b>Statewide Total</b>	<b>937,024</b>	<b>\$474,766</b>	<b>1,411,790</b>

**TABLE 23**  
**2010 OPERATING COSTS TO MEET 80 PERCENT NEED**

<b>Area</b>	<b>Estimated Base Cost</b>	<b>Additional Service Cost</b>	<b>Total Cost</b>
District 1	3,074,456	1,330,933	4,405,389
District 2	1,425,664	1,090,328	2,515,992
District 3	2,284,160	6,050,709	8,334,869
District 4	2,108,653	451,735	2,560,388
District 6	2,044,251	1,775,457	3,819,708
District 7	2,563,084	1,933,218	4,496,302
District 8	3,315,627	2,006,931	5,322,558
Duluth	9,849,557	0	9,849,557
East Grand Forks	205,330	23,658	228,989
St. Cloud	4,831,144	295,513	5,126,657

Moorhead	932,088	0	932,088
Rochester	2,686,741	323,219	3,009,960
La Crescent	78,485	236,096	314,581
<b>Statewide Total</b>	<b>\$35,399,240</b>	<b>\$15,517,797</b>	<b>\$50,917,038</b>

These data produced an estimate of the additional annual operating funds required. The need to provide additional operating hours does not, in all cases, require additional vehicles. The accompanying Table 24 shows the number of hours that transit vehicles in Greater Minnesota should be able to operate in a year.

**TABLE 24  
ANNUAL HOURS PER VEHICLE**

<b>System</b>	<b>Hours Per Vehicle</b>
Section 5307 System / Urban and Large Urban	2,500
Section 5311 System / Small Urban and Rural	2,000

The capital need of each system is estimated based upon the number of vehicles in the fleet, the availability of these vehicles to provide more service hours, and the need for additional hours if standards are exceeded. As seen in Table 25, the additional vehicle need totals 210 units and is comprised mainly of smaller vehicles.

**TABLE 25  
ADDITIONAL VEHICLES BY SIZE TO MEET 80 PERCENT NEED**

<b>Area</b>	<b>Small</b>	<b>Medium</b>	<b>Large</b>	<b>Total</b>
District 1	21	0	0	21
District 2	5	7	0	12
District 3	85	6	0	91
District 4	6	0	0	6
District 6	27	0	0	27
District 7	26	0	0	26
District 8	20	0	0	20
Duluth	0	0	0	0
East Grand Forks	0	0	0	0
St. Cloud	0	0	2	2
Moorhead	0	0	0	0

Rochester	3	0	0	3
La Cresent	2	0	0	2
<b>Statewide Total</b>	<b>195</b>	<b>13</b>	<b>2</b>	<b>210</b>

Having established the number of expansion vehicles required by system, the next step is to translate these requirements into specific vehicles, full-sized buses, mid-sized buses or cut-aways. Looking at the size of the system, the type of service provided, and the operating environment does this. A cost for each type of vehicle is assigned based on the latest statewide cooperative procurement and industry estimates for new vehicles as shown below in Table 26.

**TABLE 26  
COST PER VEHICLE**

<b>System</b>	<b>Cost Per Vehicle*</b>
Small	\$54,000
Medium	\$85,000
Large	\$261,000

*\*All costs are 2000 estimated*

The capital costs necessary to expand the fleet are presented in Table 27. Although these costs are shown as a one-time purchase, additional vehicles should be purchased in increments to meet the ridership growth as it occurs until 2010. Thus this number represents the amount that should be spent on increasing fleet size by 2010. Actual capital costs will vary by year, thus all costs presented below in Table 27 are in dollar figures of the base year, 2000.

**TABLE 27  
EXPANSION CAPITAL COSTS TO MEET 80 PERCENT NEED  
(COSTS\* ARE IN \$1,000)**

<b>Area</b>	<b>Small</b>	<b>Medium</b>	<b>Large</b>	<b>Total</b>
District 1	1,134	0	0	1,134
District 2	270	595	0	865
District 3	4,590	510	0	5,100
District 4	324	0	0	324
District 6	1,458	0	0	1,458
District 7	1,404	0	0	1,404

District 8	1,080	0	0	1,080
Duluth	0	0	0	0
East Grand Forks	0	0	0	0
St. Cloud	0	0	522	522
Moorhead	0	0	0	0
Rochester	162	0	0	162
La Crescent	108	0	0	108
<b>Statewide Total</b>	<b>\$10,530</b>	<b>\$1105</b>	<b>\$522</b>	<b>\$12,157</b>

*\*All costs are 2000 estimated*

As part of the analysis, the Office of Transit prepared a replacement program for the current Greater Minnesota transit fleet in January 2002. It is this analysis that was used to determine fleet replacement numbers for this Plan. As seen in Table 28, the replacement of the 532 vehicles would cost about \$63 million.

**TABLE 28**  
**PROJECTED FLEET REPLACEMENT COSTS**  
**(COSTS ARE IN \$1,000)**

Year	Vehicle Class										
	Class 300		Class 400		Class 500		Class 600		Class 700		Total
	Total Units	Cost (\$)	Total Units	Cost (\$)	Total Units	Cost (\$)	Total Units	Cost (\$)	Total Units	Cost (\$)	Cost (\$)
2002	2	94	23	1,334	5	106	2	236	28	7,308	9,078
2003	1	48	34	2,040	16	1504	2	244	22	5,896	9,504
2004	3	150	36	2,232	11	1067	2	252	15	4,230	7,690
2005	0	0	32	2,048	13	1261	2	260	6	1,860	5,182
2006	1	52	33	2,178	7	712	3	402	16	5,104	8,053
2007	1	52	39	2,652	9	954	0	0	2	656	4,323
2008	0	0	28	1,970	13	1378	1	144	3	1,011	4,372
2009	2	108	40	2,880	7	109	3	459	20	6,920	10,024
2010	1	54	31	2,294	9	1,008	4	632	4	1,420	4,785
TOTAL	11	\$558	296	\$19,628	90	\$8,099	19	\$2629	116	\$34,405	\$63,011

Note: Base prices calculated from most recent cooperative procurement with prices inflated at 3 percent per year.

## Summary

In summary, estimates are made of the 2010 transit needs of Greater Minnesota. The estimates are based upon data on current transit services and population and demographic information projected for the year 2010.

The analysis shows that in 2010 there will be a need for public transportation to serve 16.7 million trips in Greater Minnesota. If current productivity levels are maintained by Greater Minnesota systems, they will provide 9.6 million trips or 57.4 percent of the need. The gap in service need can be eliminated in three primary ways:

- Make efficiency improvements to current services. However, since current systems are relatively efficient, this action will satisfy only a small portion of the need (i.e., 0.33 million trips or 1.9 percent of need).
- Continue to coordinate and cooperate with special transportation services, such as those funded with Section 5310 funds and intended to meet mobility needs of senior citizens and persons with disabilities. Maintaining coordination and cooperation with these other agencies will result in 2.8 million trips or 16.8 percent of the need.
- Commit more resources to enable expansion of services by existing and new providers. Service expansion will need to provide 3.99 million more trips or 23.9 percent of the need.

The plan develops two targets for fulfilling the need. First, by 2010, it is proposed that transit should meet at least 80 percent of the need in all 80 counties of Greater Minnesota. Meeting this 80 percent target means that more resources are required to provide services for a total of 15.6 million trips. These trips will require 1.4 million hours of service at an annual operating cost of \$50.9 million as well as 210 more

vehicles with a capital cost of \$12.1 million.

The second target is to fulfill a minimum of 90 percent of the need in all 80 counties in Greater Minnesota by 2020.

## **CHAPTER 5 PERFORMANCE GUIDELINES**

This chapter describes how Mn/DOT's commitment to efficient and effective public transportation services in Greater Minnesota will be guided by performance guidelines. These guidelines have been developed to reflect the seven different service types that are operated by Greater Minnesota public transportation systems. The plan is for each system to adapt and refine the guidelines and incorporate them into its own performance standards for each type of service that it operates. This chapter defines how these performance guidelines were developed, lists the seven different performance guideline categories, summarizes the guideline topics and describes how they should be applied by an individual system.

## **Guideline Development**

In order to evaluate the adequacy of the existing transportation services operated by Greater Minnesota public transit systems and to guide the formulation of improvement proposals, a first step is to establish a set of transit performance guidelines. Initially, these guidelines should be used as a baseline whereby each system defines its own set of standards associated with its appropriate service type. The process using guidelines to develop standards for each system is discussed in the final section of this chapter.

Five factors were considered during the development of performance guidelines for Greater Minnesota systems. These factors include:

- 1) Suitability to the characteristics of the service territory and requirements.
- 2) Consideration of the cost implications of each guideline.
- 3) Ease of use. The parameters defined in each guideline permit a straightforward evaluation of actual system performance and set forth clear direction for evaluating service alternatives.
- 4) Comments obtained from representatives of Greater Minnesota systems from two different sets of District Workshop meetings where the guidelines were presented.
- 5) Prevailing practice in the transit industry, particularly in Greater Minnesota.

Several points should be made with respect to the development and subsequent application of the performance guidelines. First, reasonable judgment must be used in applying the guidelines to assess the current service. While guidelines are quantitative for the most part, unusual situations may arise which warrant special consideration. Issues related to public policy and funding cannot always be addressed fully by numerical guidelines.

Second, the guidelines may conflict with one another since some yardsticks relate to the benefits to be derived from transit service while others relate to their costs. Nonetheless, the guidelines permit the tradeoffs to be delineated and an informed decision made to resolve differences.

Third, the comparison of actual performance with the guidelines should not be made on a "pass-fail" basis. Instead, results should be viewed in terms of the proportion of time the guideline is met or the

level of attainment. Finally, the guidelines have been set at reasonable values that can be achieved or that can serve as useful “targets.”

### Guideline Categories

With the wide variety of transportation service types operating in Greater Minnesota, including fixed route, route deviation, demand response and volunteers, there is a need to develop guidelines based on the differing service types.

It should be noted that rural areas in Minnesota have been classified into three different system types – those operating in a non-urban community, those operating within a county and those operating within multi-counties. The performance guidelines for each of these rural operating areas have been assumed to be the same. However, the guidelines will vary depending on the type of service that is operated, i.e., demand response, route deviation or volunteer.

Another aspect of defining service categories is that for this guideline, rural demand response service applies for all trips less than 45 minutes in length while rural route deviation service applies to all longer trip lengths.

Seven categories of performance guidelines are defined below:

**TABLE 29  
PERFORMANCE GUIDELINE CATEGORIES**

<b>Services Type</b>	<b>Application</b>
ADA Demand Response	Urban Systems
Fixed-Route	Urban Systems
Rural Demand Response	Non-Urban Community, Countywide and Multi-County Systems
Rural Route Deviation	Non-Urban Community, Countywide and Multi-County Systems
Small Urban Demand Response	Small Urban and Small Urban within County and Multi-County Systems
Small Urban Route Deviation	Small Urban and Small Urban within County and Multi-County Systems
Public Transit Volunteer	Non-Urban Community, Countywide and Multi-County Systems

The proposed sets of performance guidelines are divided into two primary categories, those related to service design and those related to service performance. A description of each of the individual guidelines within the two broad categories is presented in the following sections.

### Service Design Guidelines

This category deals with all aspects of the placement of the services on the street and includes 17 different guidelines. It should be noted that some guidelines are applicable to certain service types and not to others.

Availability - There are two separate components used in developing availability measures to gauge the need for transit service. The first measure, production end, relates to the size of the residential community that should have service. The second measure, attraction end, relates to the size of activity centers that warrant the need for transit service. It should be noted that these two measures for availability relate only to urban fixed-route and small urban and rural route deviation services. The guideline for route deviation services also lists the extent that the service should deviate off the base route.

Frequency - This guideline is one of the commonly applied measures related to the adequacy of urban fixed-route and small urban and rural route deviation services. In general, frequencies or “headways” are established to provide enough vehicles to meet the passenger demand or if loads are light, then headways should be set on the basis of policy considerations.

Trip Making - This guideline is applicable to demand response, route deviation and volunteer services by setting minimum parameters associated with the trip making function. It covers a number of topic areas including the reservation process, scheduling and the dispatch function.

Span - This measure is applicable to all service types and is the duration of time that the service is “made available” or operated during the course of the service day. The need and desires of the transit constituency, as well as the financial capability of the transit operator, are the key considerations in setting the service spans.

Load Factor - Loading guidelines are applicable to all service types and are established to ensure that most passengers will be able to obtain a seat on a vehicle for the entire trip. This guideline, known as the load factor, is measured as the ratio of passengers on board to the seated bus capacity expressed as a percent.

Access/Availability - The transit operator should have the ability to adjust requested pick-up and drop-off times to promote efficiencies. In some situations, adjustments to requested trip times would enable a single vehicle to serve more than one request. Other guidelines for this category include acceptable levels of standing order (recurring trips), trip priorities and access. This guideline is applicable to all service types except urban fixed-route service.

Bus Stop Spacing - For fixed-route services, route alignments are the primary determinants of transit availability. The second determinant is the bus stop spacing along those routes. Fixed-route bus stop spacing guidelines are defined for a variety of service areas.

Directness - This guideline addresses the need for providing patrons a reasonable in-vehicle time while at the same time achieving some level of scheduling efficiency. The directness guideline attempts to strike a balance between the need of the rider and operator. Accordingly, two guidelines are suggested

that include trip length and the need for transferring between vehicles. This guideline is applicable to all services except those provided by volunteers.

Dependability - The transit provider should provide the transit patron with a reasonable guarantee that the service will operate on-time. The dependability is important to people who plan time-specific trips on the transit system. Moreover, riders associate a time penalty with unreliable service reducing the attractiveness of public transportation. This guideline is applicable to all services.

Rider Compliance (No Show and Cancellation Policy) - Riders should be educated as to the benefits of systems with a low incidence of no shows. A similar process should be set for those that repeatedly cancel service. For both the no-show and cancellation policy an appeal process should be available. This guideline is applicable to all service types except urban fixed-route service.

Vehicle Attributes/Conditions - To maximize the pleasure and comfort of the bus rider, and thereby spur demand, the systems should provide attractive and comfortable vehicles. Guidelines are primarily a matter of cleanliness, condition, accessibility, age, size and availability of spares. These vehicle guidelines are applicable to all service types.

Driver Quality - Drivers are the most visible and influencing factor regarding the actual and perceived quality of a transit system. Therefore, the guideline lists the steps and care that must be taken in the selection and training of drivers. This guideline is applicable to all service types.

Fiscal Condition - The financial situation of a transit system can be defined in terms of four guidelines: (1) fare structure, (2) cost efficiency, (3) farebox recovery ratio, and (4) productivity. The latter two components are included in the next section of this guideline within the service performance category. This guideline is applicable to all service types.

Vehicle Signage - Vehicles used in all service types should be signed so the riders easily recognize them. The signage should include vehicle number; transit system name and telephone number including area code.

Public Information - A transit system should develop and maintain a public information program that not only provides information to those who ask for it, but also aggressively educates the public about the system and how to use it. This guideline relates to telephone information as well as the printed materials associated with all service types.

Safety - This guideline for all service types addresses the variety of activities that a system must undertake to insure that it operates a safe and reliable system.

In-House Vehicle Maintenance - As systems grow in size, there may be a need to change the way vehicle maintenance is performed. This guideline addresses at what size a change to in-house vehicle maintenance is justified.

Some examples of the variation of service design guidelines by service type are shown below.

**TABLE 30**

## SAMPLE SERVICE DESIGN GUIDELINES

Service Type	Weekday Span	Maximum Trip Length	On-Time Performance
Urban Fixed Route	6 a.m. to 9 p.m.	No more than 1.7 times direct routing	0 Early to 5 minutes late
Urban ADA Demand	Same as urban fixed route	60 minutes	+/- 15 minutes
Small Urban Demand Response	7 a.m. to 5 p.m.	45 minutes	+/- 15 minutes
Small Urban Route Deviation	8 a.m. to 4 p.m.	30 minutes	0 early to 5 minutes late
Rural Demand Response	7 a.m. to 5 p.m.	45 minutes	+/- 15 minutes
Rural Route Deviation	Minimum a.m. and p.m. peaks	NA	0 early to 5 minutes late

### Service Performance Guidelines

This category deals with two aspects of the performance of the services operated by Greater Minnesota transit systems:

Farebox Recovery Ratio - A primary objective of a transit system should be to provide the people within its service area with the best possible service within reasonable budget constraints. To achieve this, a farebox recovery goal of 20 percent is suggested for all service types. This means that each system should recover an amount equal to 20 percent of its operating costs from farebox revenues. This guideline also suggests that individual services that are operated within the same system be separately reviewed on the same criteria. Services that fall far below the 20 percent target should be reviewed for possible change.

Productivity - Productivity is measured in terms of how many passengers a transit system carries for each unit of service. The most common measure is passengers per hour.

A guideline based on the peer group analysis has been set for each service type:

**TABLE 31**

## PASSENGER PRODUCTIVITY GUIDELINE

Services Type	Passengers/Hour
ADA Demand Response	3
Fixed-Route	15 to 20
Rural Demand Response	5
Rural Route Deviation	5
Small Urban Demand Response	5
Small Urban Route Deviation	8
Public Transit Volunteer	2

This guideline also suggests that individual services that are operated within the same system be separately reviewed on the same criteria. Service that falls below the passenger per hour target for the particular service type should be reviewed for possible change.

### Guideline Application

A separate report contains a detailed description of each set of performance guidelines for the seven service types operated by Greater Minnesota systems. These guidelines should be the starting point for the development of standards for each system.

A five-step process is suggested for transforming these guidelines into standards.

1. Identify the service types that are operated by the system. Most service types should be easily identified. However, one distinction has been made in this plan related to rural services. Rural services that have trip lengths that exceed 45 minutes are classified as route deviation services while the rural demand response service applies to all shorter trip lengths.
2. Select initially only a few of the guideline categories. Passenger productivity is one category that should be included.
3. Determine the performance of the system for the categories that were initially selected. In determining performance, the system wide as well as the individual performance for each different service type should be determined. For example, for passenger productivity, the goal should be to determine individual performance for each vehicle placed in service for demand response, route deviation and volunteer services and for each route for fixed-route service. Data for this review should be collected daily and aggregated on a monthly basis.

4. Identify the standards for the system for the categories that were reviewed. For example, the analysis performed in the prior step could have identified that system wide performance is six passengers per hour that can be set as the system standard. However, the rural route deviation service produces seven passengers per hour while the rural demand response produces only four passengers per hour. This review shows that consideration should be given to converting as much demand response services to route deviation service as possible.
5. Follow the same process for all other categories, reviewing performance of the system for the applicable service type and category listed in the guideline and based on the review, set the standards to reflect the particular situation.

The standards and the periodic application can become a powerful tool in guiding the restructuring of services to become more productive and to better serve the residents of a community. It should also be noted that the service standards that are developed for a system must be reviewed every few years to determine whether they should be revised to reflect changes that have been made in the system.

## GLOSSARY

This glossary contains certain technical terms used in this plan as well as some other terms that are used throughout the public transportation industry.

**Accessible Vehicle** - A vehicle equipped with a wheelchair accessibility package that allows passengers using wheelchairs to enter, exit, and ride in the vehicle.

**Americans with Disabilities Act (ADA)** - The passage of the Americans with Disabilities Act in July 1991 gave direction to local transit agencies to ensure full access to transportation for persons with disabilities.

**Average Trip Length** - Total number of revenue miles traveled divided by the total number of passenger trips consumed.

**Capital Cost** – The cost of equipment and facilities required to support transportation systems: vehicles, radios, shelters, etc.

**Commercial Driver's License (CDL)** - A special operating license for drivers of certain types of vehicles based on the vehicles weight and seating capacity.

**Coordination** - A cooperative arrangement among transportation providers and/or purchasers aimed at realizing increased benefits through the shared management and/or operation of one or more transportation-related functions.

**Cost Effectiveness** - The ratio of the cost of a transit system to the level of service provided. Various measures, for example cost per passenger trip, may be used to determine cost effectiveness.

**Deadhead Hours** - Hours that a vehicle travels either between the garage and the route or when changing routes and the vehicle must travel from the end of one route to the beginning of another route.

**Deadhead Miles** - Miles that a vehicle travels either between the garage and the route or when changing routes and the vehicle must travel from the end of one route to the beginning of another route.

**Dial-A-Ride or Demand Responsive** - A transportation service characterized by flexible routing and scheduling of relatively small vehicles to provide door-to-door or point-to-point transportation at the user's demand.

**Elderly and Disabled (E&D) Transportation** - Transportation service to persons who are physically disabled and/or elderly and live in areas with a population over 50,000 (Section 5307).

**Fare** -The designed payment for a ride on a passenger vehicle, whether cash, tokens, transfer or pass.

**Farebox** - A device that accepts coins, bills, tickets and tokens given by passengers as payment for rides.

**Farebox Revenue** - The revenue earned by a transit agency through passenger fares.

**Federal Transit Administration (FTA)** - A part of the United States Department of Transportation that administers the federal program of financial assistance to public transit.

**Fixed-Route** - Transportation service operated over a set route or network of routes generally on a regular time schedule (also known as Regular Route).

**Flexible-Fixed Route** - Transportation service that operates on a regular route, but will on demand change the route to meet the user's need. (See Route Deviation)

**Large Urbanized Area Service** – Transportation service operated by the Duluth Transit Authority, but does not include the elderly and disabled service provided by the transit authority.

**Marketing** – A comprehensive process to induce greater usage of transportation services by determining the need or demand of the community and potential customers, developing and implementing service on the basis of these needs, pricing the services, promoting the services, and evaluating the services as implemented in relation to customer need and marketing goals.

**Operating Cost or Expense** – The recurring costs of providing transit service, i.e., wages, salaries, fuel, oil, taxes, maintenance, depreciation, insurance, marketing, etc.

**Operating Deficit** – Total operating expenses minus total operating revenue.

**Operating Revenue** – The total revenue earned by a transit agency through its transit operations. It includes passenger fares, advertising and other revenue.

**Paratransit** – Flexible forms of public transportation services that are not provided over a fixed-route, i.e. demand responsive service.

**Passenger Miles** – The total number of passengers carried by a transit system multiplied by the number of miles traveled.

**Passenger Trip** – One person making a one-way trip from origin to destination. One round trip equals two passenger trips.

**Peak Period** – The hours when traffic or passenger demand is the greatest.

**Peak Vehicles** - The number of revenue vehicles that are used to meet the maximum service requirements during any portion of a day.

**Point Deviation** – Transportation service in which the transit vehicle is required to arrive at designated transit stops in accordance with a prearranged schedule but is not given a specific route to follow between these stops. It allows the vehicle to provide curbside service for those who request it.

**Public Transportation** – Transportation service that is available to any person upon payment of the fare, and which cannot be reserved for the private or exclusive use of one individual or group. "Public" in

this sense refers to the access to the service, not to the ownership of the system that provides the service.

**Ridesharing** – A form of transportation, other than public transit, in which more than one person shares in the use of the vehicle, such as a van or car, to make a trip.

**Regional Trade Centers** - As described in *Moving Minnesota from 2000 to 2010*, these are cities that serve as centers of trade and services for a surrounding area.

**Revenue Hours** - Hours traveled by a vehicle in revenue service (when available for travel by the general public). Revenue hours include layover/recovery time but do not include deadhead time.

**Revenue Miles** - Miles traveled by a vehicle in revenue service (when available for travel by the general public). Revenue miles do not include deadhead miles.

**Route Deviation** – Transportation service on a non-exclusive basis, that operates along a public right-of-way, on a fixed route, from which it may deviate from time to time, in response to a demand for its service or to take a passenger to a destination, after which it returns to its fixed route.

**Rural Area** – A geographic area with a population of less than 2,500 (Section 5311).

**Small Urban** – A geographic area with a central city that has a population of between 2,500 and 50,000 (Section 5311).

**Subscription Service** – Transportation service in which routes and schedules are prearranged to meet the needs of riders who sign up for the service in advance.

**TEA 21** – Transportation Equity Act for the 21st Century, reauthorization of ISTEA for FY 1998 – 2003.

**Total Passengers** – The total of all revenue passengers plus transfer passengers on second and successive rides, and free ride passengers (also known as unlinked passenger trips).

**Transit** – All forms of riding together, at least two persons riding per trip. The term includes fixed-route and paratransit services as well as ridesharing.

**Unlinked Passenger Trips** - A measure of the amount of transit service consumed by passengers. It is the number of passengers who board a vehicle. A passenger is counted each time he/she boards a vehicle even though he/she may be on the same journey from origin to destination and transfers between vehicles to complete the trip.

**Vehicle Hours** - Hours traveled by a vehicle from the time it pulls out from the garage to the time it returns to the garage from revenue service. Vehicle hours include revenue hours plus deadhead time.

**Vehicle Miles** - Miles traveled by a vehicle from the time it pulls out from the garage to the time it returns to the garage from revenue service. Vehicle miles include revenue miles plus deadhead miles.